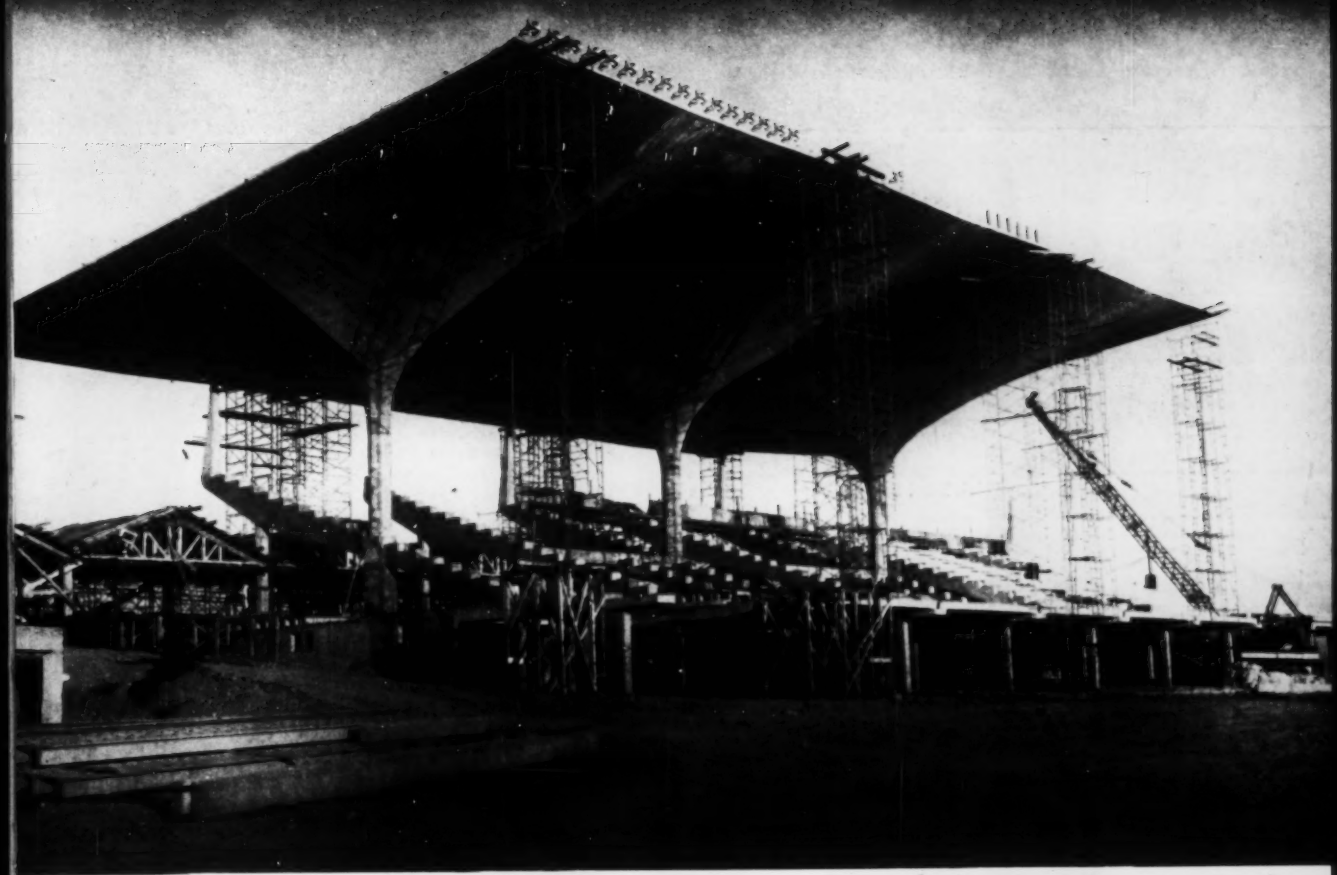
ENGINEERING NEWS-RECORD



Concrete umbrellas cover a grandstand p.36

STEVENS NICE CS
UNIV MICROFILMS INC EDI
313 N FIRST ST
ANN ARBOR MICH

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Quality in construction

BRIDGES

by Pittsburgh-Des Moines

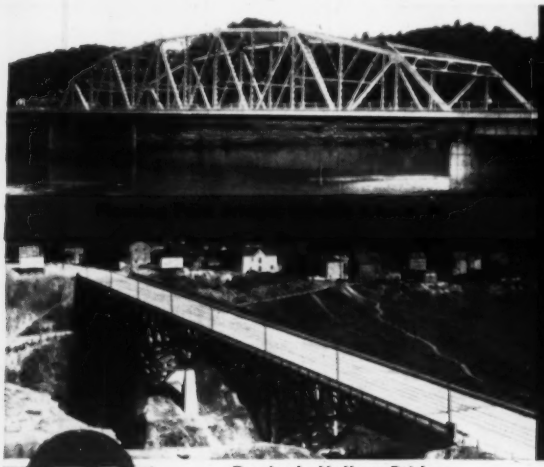
Woodrow Wilson Memorial Bridge, Alexandria, Va.

Brick Yard Bridge, Topeka, Kansas

Beaver River Bridge, Rochester, Pa.

Highway Bridge, Jefferson Parish, La.

With steel fabricating plants in Pennsylvania, Maryland, Iowa and California, PDM meets promptly and efficiently the material requirements for highway bridges of every type. Skilled field organizations assure sound craftsmanship in erection, with crews experienced in all phases of bridge construction, including foundations, pile driving and concrete. ● Wherever your project, PDM's nationwide facilities can serve it well. Let us quote on the job!



Dooker's Hollow Bridge, Allegheny County, Pa.

PDM STEEL COMPANY

Pittsburgh-Des Moines Steel Company

Plants at PITTSBURGH, BALTIMORE, DES MOINES, SANTA CLARA, FRESNO, and STOCKTON, CALIF.

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The Guillotine Test Proves—

HDNF

(Heavy Duty Nylon Fill)

CONVEYOR BELT FABRIC

—has more than twice the impact resistance

As you can see in the pictures, the crashing blow of the test lab's guillotine couldn't even bruise a sample of HDNF. Never before have the G.T.M.—Goodyear Technical Man—and his colleagues developed a fabric for conveyor belts with such built-in impact resistance.

Its rip-resistance, too, is unsurpassed. Fastener pull-out strength is 10% to 15% above normal. Its special balanced weave means good load support.

Yet with this incredible toughness, HDNF gives you excellent troughability. Its thinner-gauge plies pay off in better-than-ever flex life. And HDNF is, of course, mildew-inhibited—the better to serve under damp conditions.

This new kind of belting can very well be the answer to your toughest belting needs. Why not check with the G.T.M.—through your Goodyear Distributor or by writing Goodyear, Industrial Products Division, Akron 16, Ohio.

IT'S SMART TO DO BUSINESS *with your Goodyear Distributor. He can give you fast, dependable service on Hose, V-Belts, Flat Belts and many other industrial rubber and nonrubber supplies. Look for him in the Yellow Pages under "Rubber Goods" or "Rubber Products."*

The split second before the guillotine strikes conventional belting a 5,300 in.-lb. blow

Result: 3 plies broken in the conventional belting

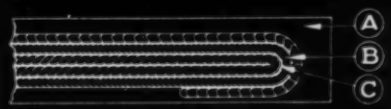
The moment of impact — a 10,600 in.-lb. blow crashes into the HDNF sample

Result: not even a mark on the sample of HDNF

GOODYEAR INDUSTRIAL PRODUCTS

GTM-Specified

HDNF Conveyor Belting Fabric for severe service



A Thick, tough, high-tensile-strength rubber cover for exceptional resistance to abrasion

B Special weave of heavy-duty cotton and nylon fill yarns for excellent resistance to impact and ripping

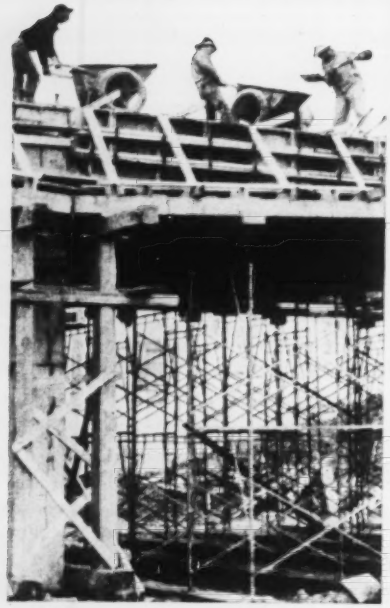
C Skim coat of rubber for added flex-life

CONVEYOR BELTS BY

GOODYEAR

THE GREATEST NAME IN RUBBER

Bridge Forming



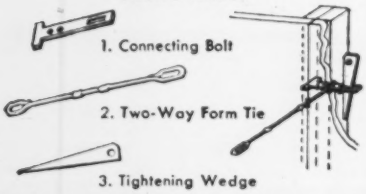
Symons Forms Cut 100 Days Off Bridge Forming Job

Ease of Erecting and Stripping Reduces Pouring Time

Contractor Lee Hoffman, Beaverton, Oregon, was given 320 days to pour 4,000 cubic yards of concrete for a bridge over Myrtle Creek in Oregon. Job was complete in 220 days or only ⅔ the time allotted.

Harry Pajutte, Chief Engineer for Hoffman, credits the ease of erecting and stripping Symons Standard High Strength Forms with contributing substantially to cutting pouring time, reducing number of men required on job, and providing greater mobility for the pouring equipment. Only

JUST 3 PIECES



3,144 square feet of panels were required for the 160,000 square feet of forming.

Symons Forms, Shores and Column Clamps can be rented with purchase option. Facts on Symons products and engineering service available upon request.

Symons

SYMONS CLAMP & MFG. CO.

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Chicago 39, Illinois

ENGINEERING NEWS-RECORD

EIGHTY-FIFTH YEAR OF PUBLICATION

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PUT MORE BITE IN YOUR BRIDGE WORK

Big Steel! Close Quarters! Machine on Falsework! This kind of situation calls for handling with only the best in equipment. Jerky swing clutches, an erratic boom hoist, and poor travel can mean delay and trouble on jobs like this.

Here is a place where the smooth action of the "Feather-Touch" Clutch Control really counts. The true feel of the load is there. No pumps, no compressors or other delicate mechanisms! Smooth booming comes with the Northwest Independent High Speed Boom Hoist—independent of all other machine functions without sacrificing either main drum—and power controlled *both up and down*. Uniform Pressure Swing Clutches give you velvet action and eliminate the jerks and grabs that make accurate spotting difficult and, if you need three load lines, there's the third Drum.

Sectional Boom Hoist Rigging and Pendant Lines, Adjustable Jibs, Extended Boom Point Sheave Shafts, Open Throat Booms, Removable Counterweight—all are either standard or available to meet your crane problems.

Don't conclude that you know *all about* Northwest. There is much in advanced design that advertising space precludes telling you about. Let a Northwest man discuss your crane problem with you.

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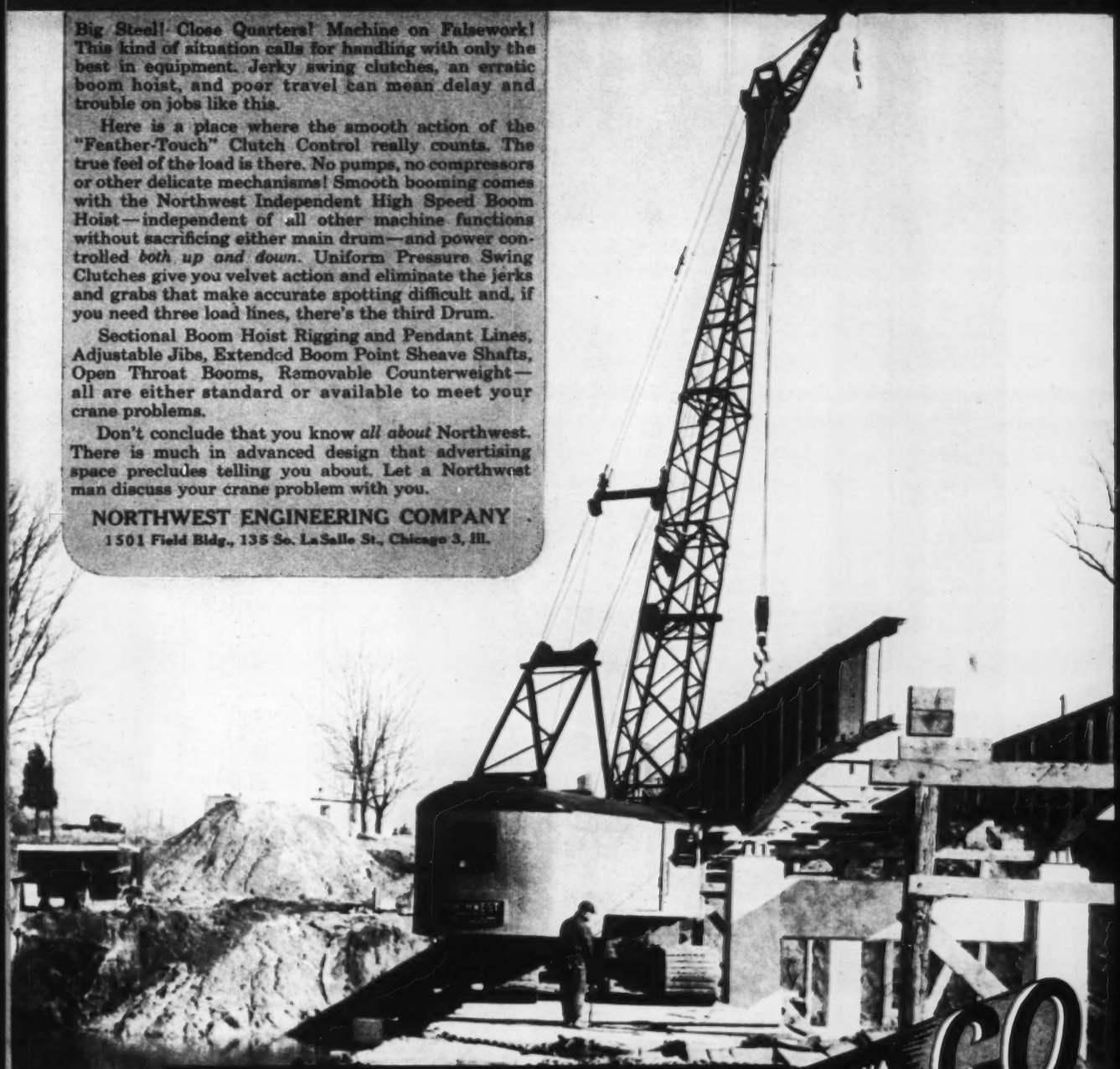


NORTHWEST *Always Ready to* GO

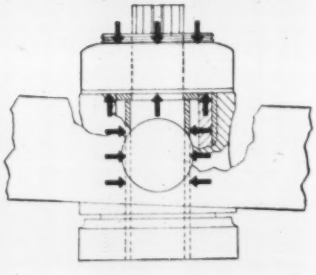
NORTHWEST EQUIPMENT IS BUILT IN THE FOLLOWING SIZES

SHOVELS	CRANES	DRAGLINES	PULLSHOVELS	TRUCK CRANES
⅝ Yd. to 2½ Yd. Capacity	13-Ton to 60-Ton Capacity	⅜ Yd. to 3 Yd. Capacity	¾ Yd. to 2½ Yd. Capacity	25-Ton and 35-Ton Capacity

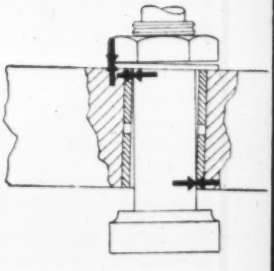
LINK-BELT SPEEDER K KING-SIZE K MODELS

put the shock

THIS—Link-Belt Speeder rotating base is trunnioned to the centerpin. Despite tilting action of the upper, there's perfect alignment of the centerpin and the bushing, plus full-length distribution of loadings to minimize stress and wear on centerpin.



NOT THIS—Without exclusive centerpin trunnion, tilting action of the base causes concentrated bending forces on the centerpin and prying action on the centerpin nut. Result is gouged centerpin bushing when swinging . . . repeated repairs.



in the rock...

come back for more!

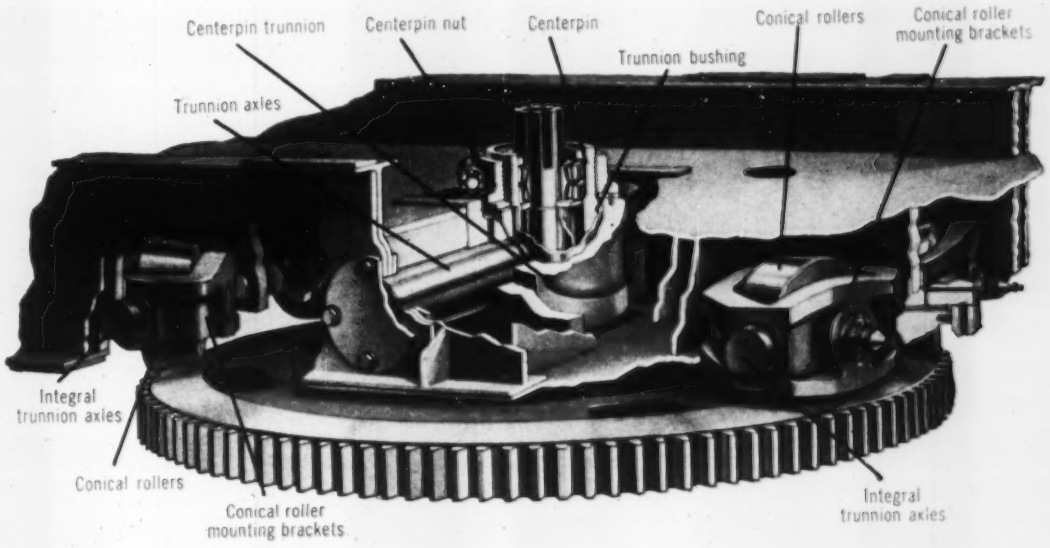
TOUGH CUTS OR BRUTE LIFTS, BURLY 1½ TO 3-YD. K-MODELS OUT-MANEUVER SMALLER RIGS . . . OUT-PRODUCE LARGER MACHINES!

Always on top of the heavyweight jobs! Your operator in the cab of a Link-Belt Speeder King-size K-model *knows* he need *never* baby this machine!

He feels the smooth surge of greater *usable* hp through hefty, extra-size shafts, gears and clutches. He socks the dipper in—rugged K-model structural members soak up the shock.

And K-models deliver these output-boosting advantages: Speed-o-Matic, the *true* power hydraulic controls . . . fast, effortless power hydraulic steer . . . *plus* bonus usable hp.

If you'd like more facts demonstrating how King-size K-models (1½ to 3-yd. capacity) outstrip the field, see your distributor or write Link-Belt Speeder Corporation, Cedar Rapids, Iowa.



Exclusive centerpin trunnion and oscillating roller design evenly distributes all loadings

The centerpin trunnion is mounted on two stub axles within the upper frame, permitting the upper to oscillate without any of the binding stresses common to other centerpin arrangements. All loadings are thus equalized with no prying action against the centerpin nut or bending stresses against centerpin and its bushing. Working hand in hand with centerpin design principle are the oscillating conical rollers. They are mounted within brackets that oscillate on stub axles, permitting full face contact of rollers with roller path at all times . . . no peening of roller edges or gouging of roller path.

15,231

LINK-BELT SPEEDER

It's time to compare . . . with Link-Belt Speeder

Wheeling

METAL CULVERT PIPE BY WHEELING

Problem: *How to drain the backed-up water in the ditch along this road? Farm is damaged by overflows during heavy rainstorms.*

End roadside drainage problems...

Solution: *A Small-diameter Wheeling Corrugated Culvert. Designed to outlast the road itself, it comes in long, strong, easy-to-install sections.*

with Wheeling Metal Culvert Pipe!

A small-diameter Wheeling Corrugated Culvert Pipe ends backed-up water where access and secondary roads meet.

Inexpensive to buy . . . light and easy to install . . . heavily galvanized to resist weather . . . Wheeling Metal Culverts save in initial cost and in maintenance cost. They have the flexibility needed to withstand shock of heavy loads and pressure from shifting fill.

Wheeling Metal Culvert Pipe or Pipe Arch, in copper-bearing steel or copper-bearing pure iron, plain galvanized or bituminous coated (with or without paved invert) is available in a wide range of gauges and diameters.

Write or call your nearest Wheeling warehouse, culvert plant, or sales office. Wheeling Corrugating Company, Wheeling, West Virginia.

Large-diameter Wheeling Pipe—easily controls normal flow of fast-moving streams.

Wheeling Pipe Arch—a wide, comparatively flat-bottom type of corrugated metal pipe for use where headroom is limited.

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Immediate delivery on all stocked items from these warehouses: *Boston, Buffalo, Chicago, Columbus, Detroit, Kansas City, Louisville, Madison, Minneapolis, New Orleans, New York, Philadelphia, Richmond, St. Louis.* Sales Offices: *Atlanta, Houston*

Ask a hard rock driller what he likes about a

TRACDRIL

—He'll answer:

OPERATING EASE

and

SAFETY!

DRILLERS LIKE automatic brake on CP Tracdril disc grabs and holds instantly when controls are released. Standing or drilling, the rig holds firm.

DRILLERS LIKE the way 6" channel constructed drill carriage provides rigid, steady mounting . . . eliminates distortion, resists crowding and prevents sag during horizontal operations. Feed always even. If steel breaks, drill will not plunge.

Here's "designed-in" safety. Release tramming motor throttle on CP Tracdril and multiple disc brake slams on instantly, automatically. No possibility of moving when rig is standing or drilling.

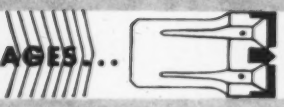
Dual control panels keep all hydraulic positioning levers within easy reach—drilling or tramming. U-Arm mounting lets operator convert fast from "hard high horizontals" to "snake holes". Two 6 HP "Power Vane" reversible motors give top tractive effort. Hard hitting CP-450DR Deep Hole Drill uses coupled drill steel, sinks 3-inch holes to 75 feet. Get complete information on Tracdrils from your CP equipment distributor, or write to *Chicago Pneumatic Tool Company, 8 East 44th Street, New York 17, N. Y.*

DRILLERS LIKE easy hole-spotting of CP Tracdril and the "deadman controls" insure operator safety. Drill moves ahead, backs, turns, pivots at a touch. Easily hauls 600 c.f.m. compressor up 10% grade.

Chicago Pneumatic

AIR COMPRESSORS • PNEUMATIC TOOLS • ROCK DRILLS • DIESEL ENGINES • ELECTRIC TOOLS • BLAST HOLE DRILLS • PUMPS • AIR-BLAST BITS

BIGGEST DRILLING NEWS IN AGES...



New V-R percussion bits give you

MORE FOOTAGE PER BIT

YOU CAN SEE THE QUALITY

V-R Percussion Bits are supplied unpainted so you can see the quality before you put the bit in the hole.

Complete range of sizes and thread types

for Bottoming Drive Rods

for Shoulder Drive Rods

for Push-on Rods

Carbide specially engineered for percussion drilling is the answer to more footage with every new V-R Percussion Bit. 29 years of V-R carbide research and manufacturing experience have enabled V-R to develop this new standard of drilling performance.

Leading contractors, construction engineers and mining engineers have given their complete cooperation in the most exhaustive on-the-job field testing program in drilling history. These tests prove that new V-R Percussion Bits will give more footage per bit, penetrate faster, and hold gauge longer on any drilling job.

Now these fast, rugged bits are ready to go to work for you. Contact your nearest V-R representative or write for complete information.

NEW...

CARBIDES . . . greater impact and abrasion resistance . . . the result of 29 years of carbide experience.

BODIES . . . exclusive fatigue resisting alloy steel, controlled heat treating and precision machined threads prevent ring-off and bit loss.

ENGINEERING . . . every bit is especially engineered for faster penetration and longer life on tough drilling jobs.

MANUFACTURING . . . V-R manufactures complete bits . . . including the manufacture of the carbide from the ore to the finished product . . . your assurance of consistent quality.

Vascoloy-Ramet corporation

PRIME MANUFACTURERS OF REFRACTORY METALS ENGINEERED FOR THE JOB

M-755

874 Market Street • Waukegan, Illinois

Reader Comment

Fixity Hard To Get

SIR—I was disappointed in the choice for first prize in the recent Steel Highway Bridge Design Competition sponsored by the American Bridge Division, U. S. Steel Corp.

The economy of this prize-winning design is deceptive. The problem of obtaining end restraint does not terminate with the cantilevering of the girders beyond the main bearings and the development of adequate end details for the girders. The problem extends into the foundation, which has to be designed to do work usually performed by the superstructure in conventional designs.

Except under the most favorable conditions, these foundation costs could be considerable. A necessary favorable condition is that the ends of the girders have to be on, or near, sound rock.

The degree of restraint assumed is not stated in the ENR article (Oct. 22, p. 30); but for a fully fixed final condition some pretensioning of the tie-downs and post-jacking of the bearings is required.

The presence of an ideal foundation is hardly typical of usual highway conditions, nor of the rules of the competition, so it is unfair to assume this.

In the case where rock is considerably lower than the ends of the girders, the end anchorage will have to be carried down to the rock. Some loss of rigidity is inevitable, and expense will increase with the distance to rock. This design could be very costly, compared with a foundation that involves mostly direct bearing.

THEODORE M. KUSS
Consulting Engineer
New York, N. Y.

Navy Has Talent to Spare

SIR—The Civil Engineer Corps of the Navy is going to lose the services of a number of very able, experienced officers because of the critical Navy problem of too many officers in the senior grades. These officers, men in their 40's and 50's, are going to have to retire to take care of the "hump" in our officer numbers, and to provide opportunities for the advancement of our junior officers.

The officers who are retiring have excellent educational backgrounds and

Engineering News-Record welcomes expression of opinions from its readers. Comment should be as brief as possible and pertinent to subjects of current construction importance. Letters should be addressed Editor, Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

This PAYLOADER® is

MORE than a tractor-shovel

THE JOB: This "PAYLOADER" with the Drott 4-in-1 bucket did an outstanding job, "saving time and operating costs," for Glenmar Construction Co. Inc., on a 16,000-ft. storm sewer on Maryland State Route 193... **loading** out excavated dirt unsuitable for backfilling... **moving** old curbing and large chunks of broken concrete ... **carrying** up to 54" diameter concrete pipe into position for lowering-in... **bulldozing** and backfilling trench, plus leveling, grading and clean-up work.

"Best piece of equipment we have ever purchased" says Peter J. Ellis, V. P. of Glenmar Construction Co. Inc., Rockville, Md. "It will move more dirt than any two competitive loaders that we have ever owned. We don't know how we ever did a job without it."

"Most useful machine I have ever used... I am using the H-70 with 4-in-1 in all phases of this contract," says Max Hutchinson, Glenmar's foreman. "The 4-in-1 versatility on rubber tires makes it the most useful single machine I have ever used in my 15 years of pipe work experience. Gives unlimited advantages that can't be determined until the need arises."

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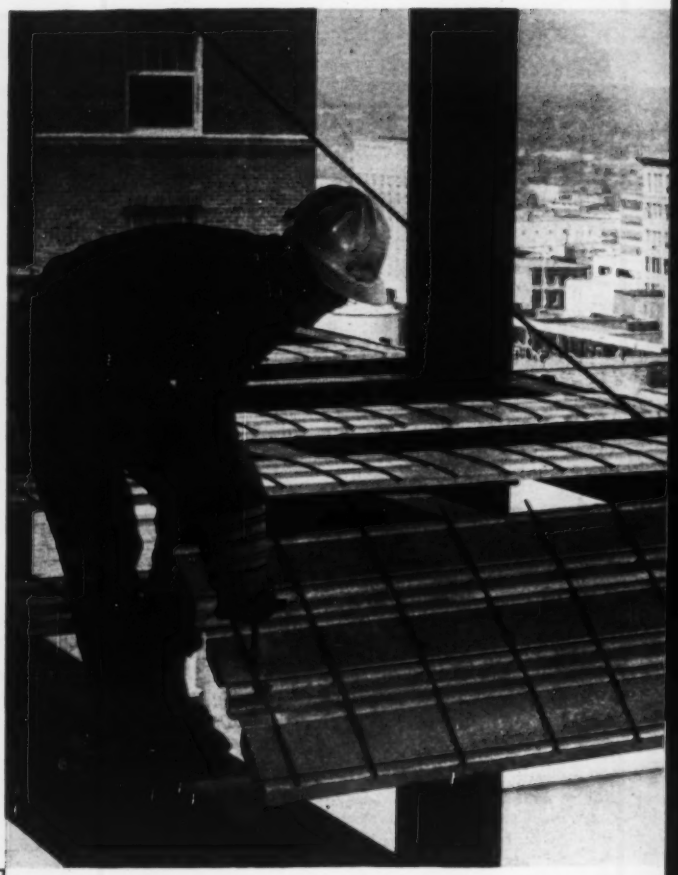
ENR 11-B-2

Texaco building team finds Granco products give a fast "one source" answer to many design problems



PROJECT: A 16-story addition to the Texaco Building.

REQUIREMENTS: Fast, economical construction . . . floor systems to meet many load conditions . . . complete electrical flexibility, today and tomorrow.

SOLUTION: Building team used *several* Granco products to meet these various requirements.

EXAMPLE: For extra strength in corridors and elevator areas — 18-gage Cofar. For heavy load conditions on equipment floor — 24-gage Cofar. For normal loads on typical floors — 24-gage Tufcor. For complete underfloor electrification — three-cell E/R Cofar.

RESULT: All needs met efficiently and economically.

CONCLUSION: Why not specify Granco products on *your* next job? Granco has a floor or roof system for every type of framing, offers you more flexibility than competitive systems. Fast "one source" delivery. No delays. Jobs move faster. Owners occupy sooner.

For more information, mail coupon at right.

TEXACO'S HOUSTON OFFICE

Taller section at left is new addition.

Office of Kenneth Franzheim, **Architects**

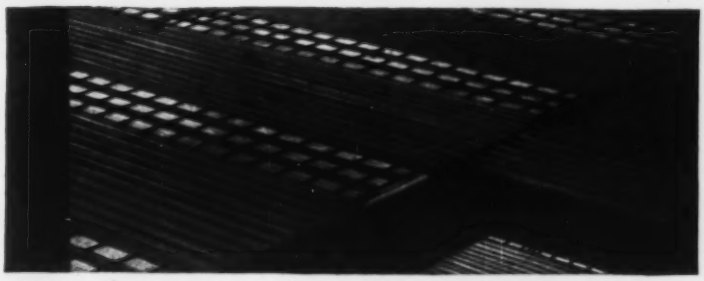
Chas. S. Chase, **Associate Architect**

Manhattan Construction Co. of Texas, **General Contractor**

Peterson Bros., **Steel Erector**

J. S. Copeland Electric Co., Inc., **Electrical Contractor**

PLACING E/R COFAR IS FAST, EASY. Choice of 1-, 2-, or 3-cell units. Long spans (up to 14′4″) mean less framing, lower costs. E/R Cofar units permit future wiring without necessitating a network of cells under the entire floor.



TUFCOR AND E/R COFAR BLEND PERFECTLY. Large E/R cells carry wiring to desks and machines anywhere on the floor. Accurate cell spacing permits preassembled shop-cut header ducts.

GRANCO PRODUCTS PROVIDE FIRM BASE for concrete. Unobstructed work area speeds concreting. No wood forms. No wasted fill. Reinforced concrete construction. Granco products are available in a number of widths and gages to help you meet various load conditions.

GRANCO®

GRANCO STEEL PRODUCTS COMPANY
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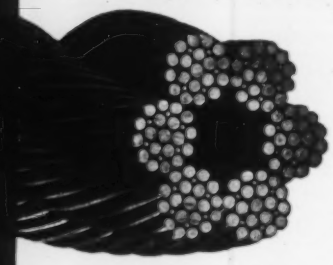
A Subsidiary of GRANITE CITY STEEL CO.

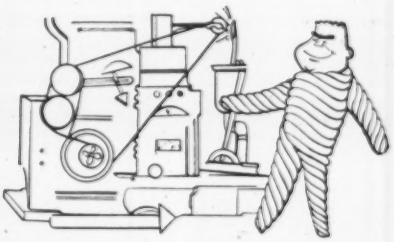
Our catalogs are filed in Sweets!

Tuffy® Wire Rope Tips

To Get The Most
for What You Pay
Be Sure You Get
Correct Rope Lay



Wire Rope is a "Machine" of Moving Parts



...and Every Part Must Fight Destructive Forces

A "look inside" a piece of wire rope reveals a precision-designed assembly of working parts. The parts are core, wire and strand. They are subjected not only to external and internal stresses and strains, but also to heavy surface pressures and abrasions. All these forces may be sustained while the rope is running under very high speeds, and abruptly changing direction of motion. That's why different uses require different constructions of wire rope.

Tuffy Balanced Dragline Rope

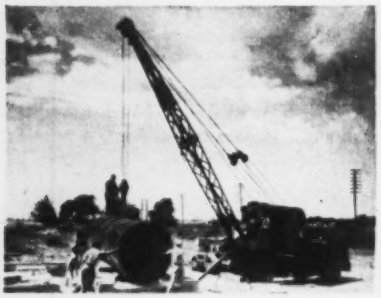
Here's highest abrasive resistance with super flexibility. Better spooling. Smoother riding on grooves. And Tuffy Dragline Rope hugs the drum when casting for full load. Gives you longer service life, consistent dependability, in handling any material — wet or dry dirt, sand, gravel, rock, cement or minerals.

Extra Strength Alone is Not Enough...
Wire Rope Must Be BALANCED

Sometimes extra strength is heavily stressed in advertising wire rope. While strength is important wherever wire rope is used, it is not the only important property. And there are cases where too much strength is a liability.

For example, manufacturers of scrapers have designed their equipment to take certain loads. These loads are controlled by, or subject to the ultimate strength of the rope. Larger ropes with higher strength do not break, but *the equipment itself begins to break up.*

Depending on your use of wire rope, the "job prescribed" Tuffy Special Purpose Ropes give you the RIGHT BALANCE of strength, toughness, flexibility for greatest efficiency and longest service life.



Tuffy Balanced Slings & Hoist Lines

"Balanced" because they combine strength, flexibility and toughness in the proper relationship to do a better job longer.

Tuffy Slings and Hoist Lines are a top-performing team in every type of materials handling. The slings are made of a patented, machine-braided fabric that's next to impossible to knot or kink. The hoist lines are a special construction in which strength, flexibility and toughness are balanced.

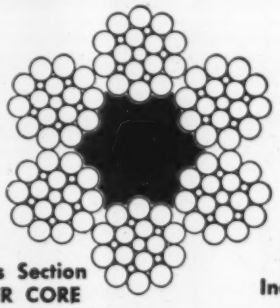
Tuffy Balanced Dozer Rope

Built to give you longer service with less downtime. Mounted on your dozer, a 150' reel of ½" or 9/16" can give you a big bonus of extra service. Here's how: when rope shows drum wear or is crushed on the drum, you feed through just enough to replace the damaged part. You save the 40 to 50 feet ordinarily thrown away. Also available in 300' and 500' reels.

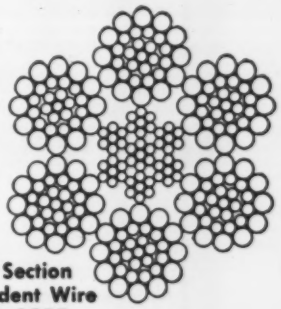
Tuffy Balanced Scraper Rope

"Balanced" construction makes it flexible enough to withstand sharp bends, yet stiff enough to resist looping and kinking when slack. Also gives higher resistance to the shock of load impact on slack line. Moves more yardage per foot because it's specially built to take the beating of drum-crushing abuse.

Let's Take A Look at the CORE of Wire Rope



Cross Section
FIBER CORE

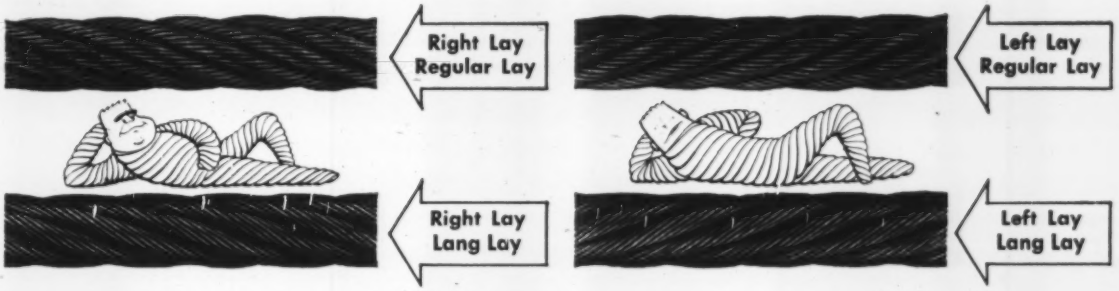


Cross Section
Independent Wire
ROPE CORE

It's either fiber or steel. Fiber cores are usually made from sisal, java, manila or combination of such hard fibers. Steel cores are either wire strand or an independent wire rope core, which amounts to a separate wire rope. The core serves as a base for the strands, keeping the rope in round shape and providing clearance between the strands for freedom of movement.

It's easy to see why wire rope is a "machine"—deserving the same care in selection and use that is given to any fine machine.

Which Lay of Wire Rope is Right for What Use



The "lay" of a rope is described in directional terms. It's a **right lay** when the strands pass from left to right across the rope. It's **left lay** when they pass from right to left.

Wire rope is also either **regular** or **lang** lay. In the **regular lay** the wires are laid in strands opposite in direction to the lay of the strands. In the **lang lay** rope, the wires are laid in the strands in the same direction as the lay of the strands.

Most wire rope is regular lay. It has the greatest stability under the widest range of uses. On the other hand, lang lay is used in applications where greater flexibility and longer wearing services are needed.

FREE!

Complete Splicing and Socketing Manual with engineer's notebook on wire rope constructions and specifications. Write for your copy now. Address Union Wire Rope Corporation, 2228 Manchester Ave., Kansas City 26, Missouri.

Specialists in high carbon wire, wire rope, braided wire fabric, stress-relieved wire and strand.

Good Man to Know: Your Nearby Union Wire Rope Distributor

Whether your wire rope need is a scheduled replacement or a red-hot emergency, your Union Wire Rope distributor is ready. He keeps varied stocks of Union standard constructions and the Tuffy Special Purpose Ropes. And he's backed by quick service from his nearby Union Wire Rope depot.

If it isn't rope you need, but advice on a wire rope problem, he's just as ready to help. If you don't know your Union Wire Rope distributor already, look under "Wire Ropes" or "Slings" in your telephone directory yellow pages.

Your Tuffy Distributor Can Help You Get Longest Service Life and Cut Rope Costs

UNION *Wire Rope*

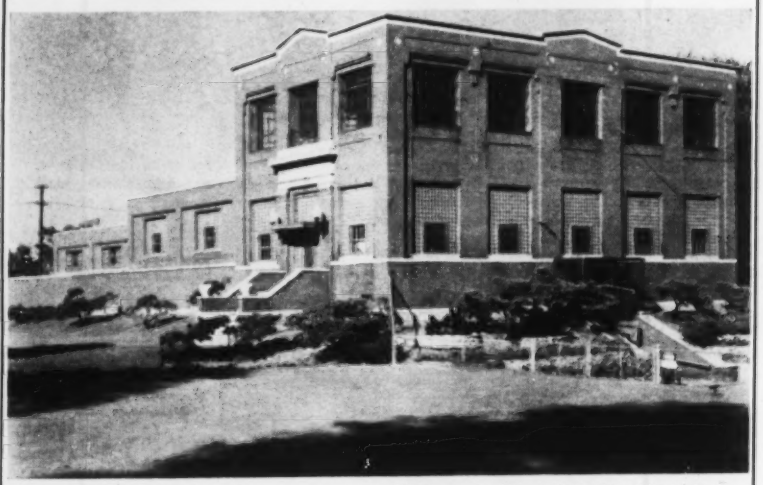
ARMCO

Subsidiary of ARMCO STEEL CORPORATION

OTHER SUBSIDIARIES AND DIVISIONS: Armco Division • Sheffield Division • The National Supply Company
Armco Drainage & Metal Products, Inc. • The Armco International Corporation • Southwest Steel Products

New steels are born at Armco

Use Northern Gravel for Rapid Sand Filter



C. F. Bufe, Superintendent, reports that the filtering material used in the Wyandotte, Michigan water plant was received as ordered from the Northern Gravel Company and has done a very satisfactory job for their city.

Filter Sand Specifications

are fully laid out. The Effective Sizes and Uniformity coefficients used by Consulting Engineers and also recommended by the American Water Works Association are the result of long specifications. Filter sand can be furnished with any effective years of research and experience.

The Northern Gravel Company is equipped to give you prompt shipment whether it be one bag or many carloads, exact to size between 0.35 MM and 1.20 MM.

Chemical Quality

of the filter sand is also important. It must be hard, not smooth, and free of soluble particles. This requires perfect washing and grading facilities. We have every modern device for washing, drying, screening and testing.

Filter Gravel

supporting the Filter Sand Bed, must be in turn, properly graded to sizes calculated to support the Filter Sand, and be relatively hard, round and resistant to solution.

Northern Gravel has no equal in facilities and our reserves of both sand and gravel are inexhaustible. Northern Gravel Company has been in business over 40 years. We guarantee uniformity of products and our records enable us to duplicate your requirements on short notice. Our location is central and we have commodity rates in every direction.

Northern Gravel Company

Box 307 **Muscatine, Iowa** Phone: AMherst 3-2711

a wealth of experience in civilian and military life. Most of them are registered civil engineers. They have an unusual background not only in engineering and construction but in the many problems of planning for the design, construction, and maintenance of the vast naval shore establishment. They are particularly well qualified for positions with cities and towns as director of public works, city engineer, etc. They would be most helpful to states that have, or want to set up, industry-attraction programs. They have experience in maintenance, highway work, civil defense, and administration.

We are taking this means of calling to your readers' attention the qualifications of these outstanding men in order that you will know of their availability for employment. If you have positions you are planning to fill in the next few months, I will appreciate the opportunity of recommending some of our officers for your consideration.

E. J. PELTIER
Rear Admiral, CEC, USN
Chief of Civil Engineers
Washington, D. C.

And Idaho Falls?

SIR—Your reporting occasionally points up the greatest criticism of the engineers. You note (ENR Sept. 3, p. 17) that a nuclear reactor will be built at Peach Bottom, Pa. We are criticized for never being definite, but that is carrying the case too far. You could have been just as explicit had you noted that the reactor would be located X miles from Philadelphia or some other identifiable location.

B. M. NACHMAN
Idaho Falls, Idaho

Editor's Note: Peach Bottom, Pa., is a hamlet in Lancaster County, about 35 miles west of Wilmington, Del., and about 20 miles southeast of Lancaster, Pa. Philadelphia is some 60 miles to the northeast.

For Your Calendar . . .

National Building Materials Distributors, annual convention, Edgewater Beach Hotel, Chicago, Ill., Nov. 16-18. Write: D. B. Richardson, Richardson Lumber Co., Denver, Colo.

Structural Clay Products Institute, silver anniversary convention, Greenbrier Hotel, White Sulphur Springs, West Va., Nov. 16-18. Write: Structural Clay Products Institute, 1520 18th St., N. W., Washington 6, D. C.

Building Research Institute, fall meeting, Shoreham Hotel, Washington, D. C., Nov. 16-19. Write: National Academy of Sciences, 2101 Constitution Ave., Washington 25, D. C.

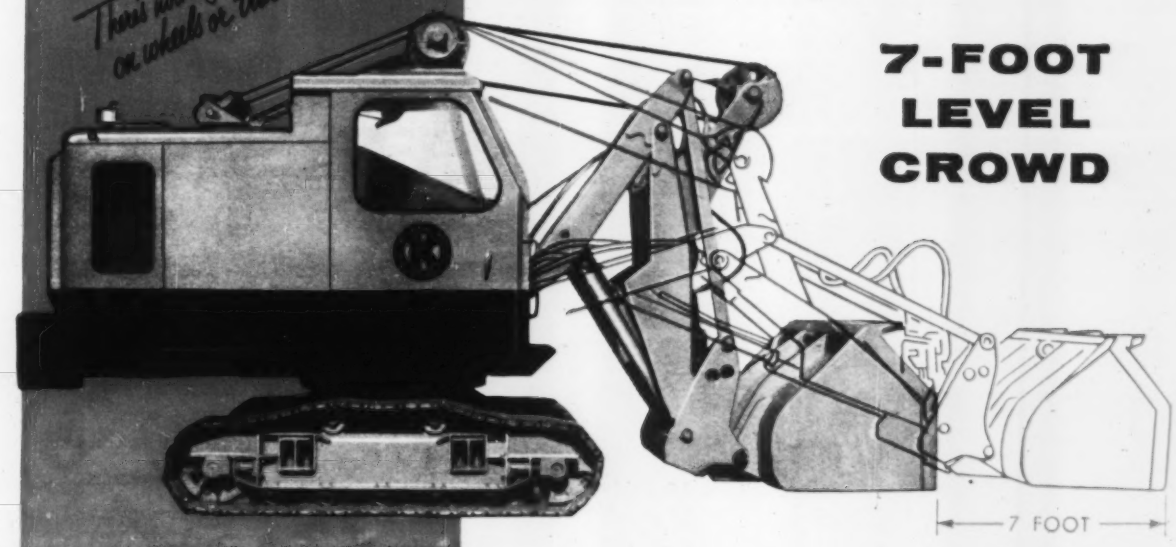
American Institute of Steel Construction, annual meeting, Boca Raton Club, Boca Raton, Fla., Nov. 30-Dec. 3. Write: L. A. Post, AISC, 101 Park Ave., New York 17, N. Y.

Paper and Paperboard Industrial Waste Conference, Edgewater Beach Hotel, Chicago, Ill., Dec. 1-2. Write: Russell L. Winget, Executive Secretary, National Council for Stream Improvement, Inc., 271 Madison Ave., New York 16, N. Y.

Industrial Uses of Radioisotopes Conference, Detroit, Mich., Dec. 1-2. Write: Harry Richart, Greater Detroit Board of Commerce, 320 West Lafayette St., Detroit 26, Mich.

KOEHRING® SKOOPER

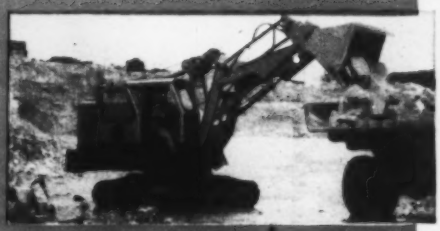
There's nothing like it on wheels or tracks!



7-FOOT LEVEL CROWD

from "stand-still" position

SKOOPER'S wide bucket can cut evenly up a sloping bank as well as on a level grade. Crawlers can be headed into cut or parallel with bank.



Koehring SKOOPER has ample discharge height — easily loads over side or end of truck. 3 types of interchangeable buckets (rock, rehandling, and general-purpose) assure big payloads in all kinds of material . . . on all types of jobs.

Here's a new concept in excavating and material-handling equipment that combines big loader capacity with shovel efficiency — top production *with low maintenance.* Revolutionary new Koehring SKOOPER gives you a *full-revolving* loader for fast "stand-still" digging and loading. Here's the way it works: Powerful action of the twin hydraulic rams crowds the 2-yard bucket along a smooth 7-foot level cleanup without traveling from "stand-still" position — or cuts at any angle of bank slope. SKOOPER then makes a full-revolving swing, dumps load fast and clean from roll-over bucket. Then, it swings back, starts next cycle — *all without traveling.* SKOOPER'S unique "stand-still" cycle not only eliminates the usual drive-in back-out waste motion, but also cuts high maintenance costs of constant skid-turn operation. It works in tight quarters inaccessible to ordinary drive-in back-out-and-turn loaders.

See SKOOPER in action — stop-watch its fast cycle time — see for yourself how many tons it moves per hour with only 70 hp. Also check low maintenance costs and unique excavator-crane convertibility. Call Koehring distributor.

Mail to: KOEHRING Division, 3026 W. Concordia, Milwaukee 16, Wisconsin

Send us: ☐ bulletin ☐ specification sheet on revolutionary new SKOOPER

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BASIC...

FOUNTAIN OF YOUTH, 1880... The well of the Little Red Schoolhouse was a popular, if not always healthful, gathering place for children. The old tin dipper in its lip-to-lip travels carried more than its share of disease.

THE MODERN DRINKING FOUNTAIN...eliminates the community cup... substitutes for it clean, pure, safe water distributed nationwide over a network of dependable cast iron pipe.

U.S. PIPE

FOR WATER, SEWERAGE AND

U. S. PIPE AND FOUNDRY COMPANY

but better than ever today!

Care and precision from mine to main insure U. S. Pipe quality

The nation's health depends largely on water. And most of this water is distributed through cast iron pipe.

U. S. Pipe, therefore, exerts every effort to make its product dependable, long-lived and trouble free. From mining of ore... through blast furnace... to final shipping, every length of U. S. Cast Iron Pipe is checked and rechecked for quality.

This end-to-end supervision is another reason U. S. Pipe measures up to the promises made for it... and to the responsibilities placed on it in service.

QUALITY BEGINS HERE . . . at one of U. S. Pipe's mines near Birmingham where ore is mined.

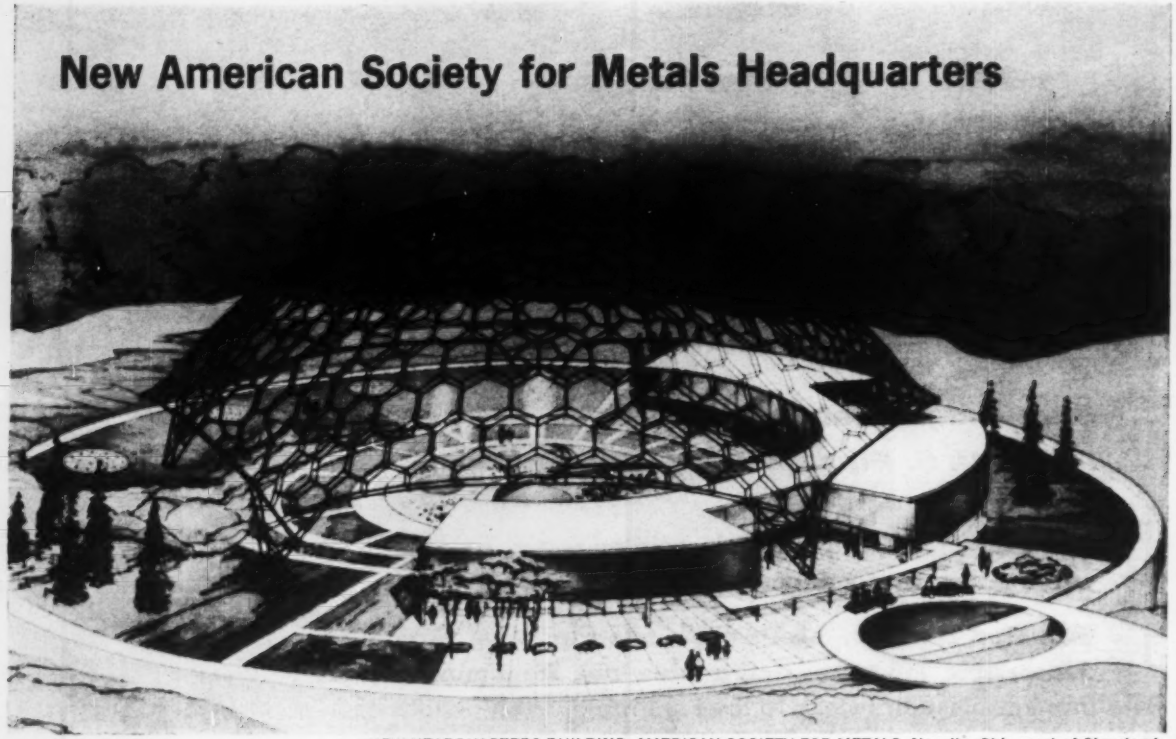
PIPE NEWLY CAST . . . 24" diameter and 18 feet long rolls out on skids from centrifugal casting machine.

SCIENTIFIC TESTING . . . Determining the chemical properties of U. S. Pipe, one of many quality checks.

INDUSTRIAL SERVICE ® CAST IRON

Birmingham 2, Ala. *A wholly integrated producer from mines and blast furnaces to finished pipe.*

New American Society for Metals Headquarters



NEW HEADQUARTERS BUILDING, AMERICAN SOCIETY FOR METALS, Novelty, Ohio, east of Cleveland.
Architect: JOHN TERENCE KELLY. *Consulting Engineer:* MAYER AND VALENTINE. *General Contractor:* GILLMORE-OLSON COMPANY. *Plumbing and Heating Contractor:* SPOHN HEATING & VENTILATING COMPANY. *Dome Design:* R. BUCKMINSTER FULLER, SYNERGETICS, INC.

Imagination shows in the building — practical planning in the choice of Jenkins Valves

Metals Park . . . dramatic new Headquarters of the American Society for Metals, is a showcase for the wonderful world of metals.

The geodesic dome, "world's largest space lattice," required thirteen miles of tubing and rods in open-work trellis. It stands as a monument to man's imagination in the use of the raw elements of the earth, as symbolized in the circular Mineral Garden below. At Metals Park, metals are everywhere and everything — providing an ideal background for ASM's many services to 30,000 members in the metal industry.

You would expect men of metals to choose metal products of superiority for their headquarters. And they did — including Jenkins Valves for *all* plumbing, heating and air conditioning lines. They had good reason: superior metals give Jenkins Valves the extra stamina that makes them famous for long life and dependability.

Whenever a building is planned with the *future* in mind, it's wise to specify or install Jenkins Valves. They're the *practical* choice to assure longtime efficiency and economy — and they cost no more. Jenkins Bros., 100 Park Ave., New York 17.

SOLD THROUGH LEADING DISTRIBUTORS EVERYWHERE

JENKINS
LOOK FOR THE JENKINS DIAMOND
VALVES
JENKINS SINCE 1864 Jenkins Bros.

ENGINEERING NEWS-RECORD

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Back Issues of ENGINEERING NEWS-RECORD *are generally available for the previous six months. Semiannual indexes will be sent on request.* ENGINEERING NEWS-RECORD *is also indexed in Industrial Arts Index and Engineering Index.*

THE CONSTRUCTION WEEK

ARCHITECTS VS. ENGINEERS—Where does engineering leave off and architecture begin? That question may soon be answered in New Jersey, where the State Board of Architects has brought a complaint against an engineer who designed an addition to a country club. The board charges he practiced architecture without a license. A special quasi-judicial group set up to hear such complaints adjourned last week after four days of hearings. Hearings will resume Thanksgiving week.

WANT AN EARTHQUAKE?—California Institute of Technology engineers have built a machine that will produce an earthquake on call. Purpose: Work over some buildings to get practical information on earthquake design. Their machine only weighs 500 lb.

SLOW STEEL PRODUCTION?—Will either management or workers go all out to produce steel during the injunction period? In one mill, overtime work had been scheduled for white collar workers if the mills opened under a voluntary settlement. But after the injunction, a white collar employee was told to report for straight time work. The injunction may just be leading to tactically controlled production so economic pressures can run their course.

CEMENT PRICES UP—Marquette Cement Manufacturing Co. will raise prices at its southeastern mills by 10 cents per bbl on January 1. The boost will bring the delivered price in Atlanta to $3.88 per bbl.

BARGAINING TABLE IS TURNED—Two thousand carpenters struck their jobs in four San Francisco Bay area counties last week in an effort to force the Northern and Central California Chapter of Associated General Contractors to follow its past practice of multi-association bargaining. AGC pulled out of an eight-employer group negotiating committee in July. A subsequent lawsuit to make the AGC sign the contract negotiated by the committee has failed.

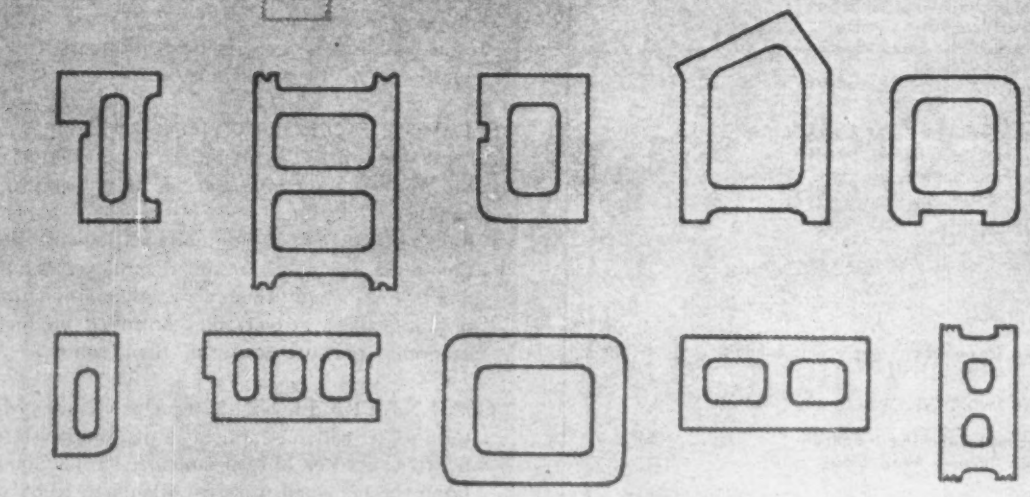
BIG SPENDING IN NORTHWEST—The Army Engineers' North Pacific Division says it will open bids and let contracts on $92 million worth of major (over $100,000) construction projects between now and June 30. Individual projects range in cost up to $50 million. The biggest single contract is expected to be for north shore work on John Day Dam.

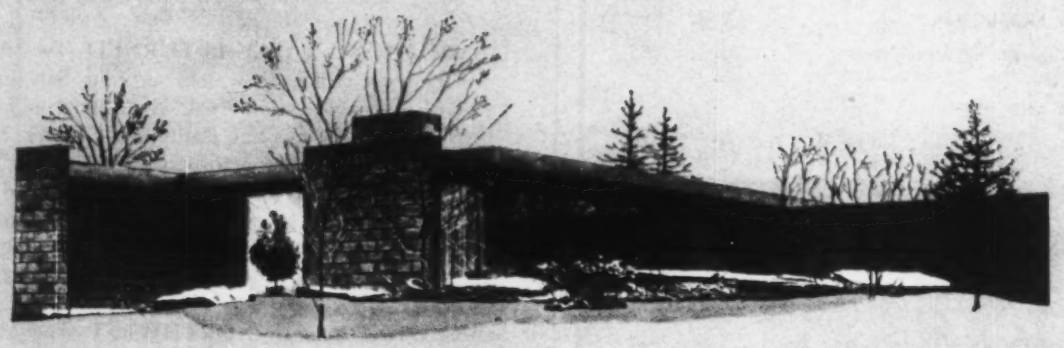
QUAKE LAKE JOB ENDS—Army Engineers have closed out their successful operation at Quake Lake. The lake was created by a landslide that blocked the Madison River in the Montana earthquake last August (ENR Sept. 3, p. 23). Now Montana Power Co. can start draining Hebgen Lake to finish assessing the damage to the reservoir and dam.

CONCRETE EXAMPLE OF STRIKING DESIGN

Selecting a variety of concrete masonry shapes made by Bethayres Concrete Products Co., Inc., architect Richard Neutra has created a home distinguished for its beauty, durability and ease of maintenance. Concrete masonry—available in an almost endless range of styles and colors—permits great freedom in designing modern buildings of many types.

Penn-Dixie cement is widely used by manufacturers of fine concrete masonry products.





PORTLAND PENN-DIXIE CEMENT

PENN-DIXIE CEMENT *Corporation*

Penn-Dixie means Permanent Dependability

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WASHINGTON OBSERVER

- **A 'bigger stick' in labor disputes?**
- **Reuther pushes union peace plan**
- **Major tax reform under study**

● **Washington in the future will play a bigger role in labor disputes affecting the entire economy.** During renewed negotiations in the steel controversy the normal mediation facilities of the federal government will be worked to the fullest. U. S. conciliation chief Joseph Finnegan sees overtime hours of work ahead for him and his staff. The Taylor committee, which reported the negotiations impasse to the President before the 80-day injunction was sought, will be back in business.

Washington expects the President to take a more direct hand, should lesser officials fail to bring hard bargaining between the companies and the union. Mr. Eisenhower won't get into the act, however, until near the end of the year, after his return from abroad.

He will ask Congress for direct legislative action if the dispute develops into a strike again when the injunction runs out on January 25. The White House is not committed to a specific idea yet, but the range of suggestions—compulsory arbitration, fact finding with recommendations and others—all point toward a heavier federal hand in nation-wide strikes (ENR Oct. 29, p. 89).

● **Walter Reuther is pushing a jurisdictional peace plan to calm the controversy between the industrial unions and the craft unions of the AFL-CIO.** Open warfare among the federation of labor's family is threatened, despite efforts of the union hierarchy to settle organizing and representation problems without outside intervention.

Mr. Reuther, at the Industrial Union Department convention in Washington, gave full endorsement to a plan for arbitration inside the family. It came out of the AFL-CIO convention in San Francisco. Mr. Reuther tried to appease all sides by saying industrial union organizing would be concentrated in unorganized areas, rather than in a jurisdictional battle between building trades or other craft unions and mass-production industry unions.

Observers see the Reuther plan as a soothing effort, but expect continued troubles once the organizing drives get under way.

● **A drastic tax reform proposal is being studied by the House Ways and Means Committee. It calls for taxing billions of dollars that are now legally exempt.** This would make it possible to cut standard tax rates without lowering total federal revenues. Hearings begin next week.

The exemption provisions under scrutiny affect nearly everyone: Interest on home mortgages can be deducted from taxable income; sand and gravel companies get depletion allowances. All together, hundreds of such deductions allow some $55 billion of personal and business income to escape from the income tax.

The committee is particularly interested in such subjects as depreciation (see p. 98), percentage depletion, capital gains, deductions for pension plans, taxation of dividends, taxation of cooperatives, business expenses and the present system of excluding social security payments from taxation.

USCOLITE PLASTIC PIPE

*Commonwealth of Virginia, Hampton Roads Sanitation District Commission Treatment Plant at Foot of 44th St., Norfolk, Va.

Uscolite pipe solves an external corrosion problem for sanitation district

The Uscolite® pipe line installed in this treatment plant* carries 150 gallons a minute of a saturated chlorine water solution (actually treated sewage water) from the chlorinator to the main sewage line entering the plant.

Prior to installation of Uscolite, pipe severely corroded externally due to the chemical content of the soil and electrolytic action. *Uscolite has eliminated the costly maintenance and constant replacement of pipe.* Uscolite pipe was installed above and below ground because it is rigid enough to resist soil pressure, yet flexible enough to follow earth contours. UscoWeld† Fittings were installed in a fourth the usual time, saving many dollars. The welds are as strong and permanent as the pipe itself. Clamp-type fittings that leak, pull off and impair flow are never needed. *Not one foot of Uscolite Pipe has ever failed in service, when used in accordance with our recommendations.*

USCOLITE ELIMINATES COSTLY PIPE INSTALLATION

Superintendent of this plant says: "The simplest 'big' piping job we ever performed. Four men laid 1000 feet of 6" pipe per day without a sweat."

• • •

When you think of plastic pipe, think of your "U. S." Distributor. He's your best on-the-spot source of technical aid, quick delivery and quality industrial plastic products.

†Patent applied for

Mechanical Goods Division

United States Rubber

WORLD'S LARGEST MANUFACTURER OF INDUSTRIAL RUBBER PRODUCTS

Rockefeller Center, New York 20, N.Y. In Canada: Dominion Rubber Company, Ltd.

Industrial Building: Slowed, but . . .

- **It's only temporary. Look for strong and steady growth after a new steel contract is written.**
- **Now construction contract awards and new plant proposals are off sharply from mid-year peak.**

Engineers, architects and contractors can look for a letdown in new industrial building construction contracts until management and the steelworkers sign a contract.

The strike, which was enjoined for 80 days, has definitely curbed both plans and contracts for industrial buildings. Effect of the strike on industrial building plans first showed in June when signs of a walkout in steel became more apparent.

From June through last month, the rate at which new plants were proposed (and added to ENR's backlog of Industrial Building in the Planning Stage) dropped over 40%.

Contracts for industrial building, however, continued to rise through September, hitting a 33-month high in that month. Then when it became evident the strike would not end before steel inventories were nearly exhausted, industrial building contracts nosedived.

Since September, contracts have dropped from an average weekly volume of $97.4 million to a weekly average of $43 million in October. That's the lowest since last April, when the 1959 upturn was building up steam.

The full impact of the drop in planned projects will show up in fewer contract awards during the next five months. That's because it takes six to nine months for industrial proposals to pass through the planning stage to construction contract. The October drop in contract awards reflects to some extent the decline in proposed plants that started in June.

Volume of new proposed plants sagged from an average of $78 million a week for the December 1958-May 1959 period, to only $45 million a week for the June-October period.

This is well above the slow pace of a year ago, but it is not enough to keep the 1959 industrial building upturn moving.

This means that contracts during the next six months will probably be held back to a weekly average rate of $35 million to $45 million.

But this relatively dim outlook is temporary. When industry and the steelworkers come to terms, chances are good that industrial building plans will stage a comeback. Contracts, too, should perk up without much delay, because projects now coasting in planning will get the green-light to move to contract.

Meanwhile, businessmen probably will be cautious about contracting for new plants. Their planning, for 1960, is optimistic, however—plant and machinery outlays are expected to rise (see next page).

Only when steel mills are operating at 85% to 90% of capacity and shipping at a corresponding rate will fabricators be in a position to chop their backlogs and handle incoming orders on normal delivery schedules. Production capacity and fabricating capacity are both more than adequate to handle the increase in new business that is likely to occur next year.

Some owners may also be holding back on industrial building contracts because of prices—mill price and fabricators' price.

Fabricators' prices traditionally rise during periods of heavy demand and relatively short supplies of construction steel, just as they drop when demand slackens and steel is readily available from the mills.

Prices bid by fabricators dropped in 1958 and remained low despite the steel mill shutdown. Major reason for this price stability is that fabricators' backlogs are relatively low.

On October 1 they totaled 1.9 million tons, according to the American Institute of Steel Construction. This is only slightly higher than the 1.8-million-ton backlog on January 1, but is about 40% less than the 3.1-million-ton backlog peak of February 1957. In that year, capacity was lower than today.

Fabricators were able to fill on schedule some 70% or more of their orders in September by drawing from heavy pre-strike inventories and by securing additional supplies from warehouses and importers. They actually may have to bridge only a one or two-month gap to keep their output up with new-order volume after a steel contract is signed. A stretchout in deliveries should therefore be but a temporary situation after mills resume operations permanently.

Prices probably will rise in the next few months because fabricators' prices are currently too low to absorb a wage increase in their shops, an increase resulting from overtime charges during a "catch-up" period, and a possible rise in the mill-price of steel. However, any price increase probably will be moderate —less than 10%.

. . . Money Is Available

The increased cost of borrowing long-term money is not expected to shake the anticipated post-strike surge of industrial building contract awards.

Any extra burden on the money market will be slight. Companies report that only $6 billion will be needed from external sources to finance total capital spending planned for 1960 (see next page). This means that more than 80% of required funds will be generated inside the companies from retained earnings, depreciation and depletion allowances. Manufacturing companies expect nearly all funds for capital spending to come from internal sources. However, estimates of external financing requirements have frequently proved to be too low.

Most financial authorities believe the interest rate climb has about reached its peak. There will be fluctuations from both sides of present levels, with the possibility that short-term rates will climb when the strike is settled. But those rates will probably ease when anticipated inventory rebuilding returns to more normal levels.

Capital Spending Will Soar 10%

- **That's the preliminary estimate of industry's '60 spending plans. It's high because the steel shortage halted some '59 projects.**
- **The steel and auto industries plan heaviest spending increases next year, especially if new-model cars continue to sell well.**

Business spending on new plants and equipment will rise sharply next year. **An increase of 10% over 1959—to $37.3 billion**—is indicated by the latest McGraw-Hill survey of preliminary capital spending plans. Business also expects to spend more in 1961 than this year.

One year ago, the same survey indicated an increase of less than 1% in 1959 over 1958, with manufacturers even planning to cut spending by 3%.

When business is good, the preliminary plans made in the fall are usually revised upward when final budgets are completed. Thus last fall businessmen planned to spend $33 billion in 1959 for new plant and equipment. But the McGraw-Hill 1959 spring survey showed planned spending for the year had been raised to $34.2 billion.

Spending plans last fall were made in the shadow of a recession. This year, a record-shattering steel strike is reflected in current business plans. Companies directly affected by the walk-out have been unable to carry out spending plans laid last spring.

Many companies had to halt construction projects for lack of equipment or steel deliveries, while others were involved in their own labor disputes.

Those circumstances are resulting in a significant decline this year from the planned spending levels of last spring. This means that the outlays originally slated for late 1959 will be carried over into 1960.

Manufacturing companies plan to lift capital outlays by 19% to $11.95 billion, well above the 10% for all business.

Among the manufacturers, steel companies plan the biggest spending—a 76% boost over outlays anticipated for this year. Their capital outlays for 1960 are placed at $1.67 billion. The chemical, machinery, rubber, paper and pulp, and automotive industries, however, all plan to make substantial increases in capital outlays next year.

Chemicals are second to iron and steel with 1960 spending planned at $1.47 billion, a 24% boost over this year. Further increases are planned for 1961.

The machinery industry now plans 1960 capital outlays of $1.16 billion, a 22% boost over estimated outlays for all of 1959. The same percentage boost is planned by electrical machinery manufacturers, with 1960 outlays estimated at $582 million.

Plans of steel, chemical and electrical machinery are in sharp contrast to plans last fall. Then, all reported spending would be cut.

Evidence of expansion in steel was advanced last week with the announcement by Youngstown Sheet & Tube Co., Chicago, that it would start on a $60-million expansion program when the steel strike ends.

The automotive industry, including truck and parts companies, plans to boost capital outlays 30% next year. Key to spending there, however, is public acceptance of new model cars.

All signs point to a big year for the car manufacturers. Dealers report an enthusiastic reception for the new models, with orders flowing in strongly. Ability to fill these orders now, however, is thwarted by the steel strike, which has brought widespread shutdowns by the major producers.

Biggest spenders next year in the nonmanufacturing group will be commercial business, chain stores, mail order and department stores, insurance companies and banks. Planned outlays next year by this segment of business are $8.6 billion, a 9% increase over the current year.

Electric and gas utilities plan a 3% increase over 1959. That will mean $6.06 billion—only slightly below the record of $6.08 billion in 1957.

Capital expenditures in the petroleum industry will dip 1% from this year to $5.15 billion. However, even a slight modification of plans could push petroleum into the plus column. Major

Capital Spending Plans by Industry

(millions of dollars)

INDUSTRY	1958 Actual*	1959 Estimated*	1960 Planned	1959-60 % Change	1961 Planned
ALL MANUFACTURING	$9,761	$10,025	$11,957	+19%	$11,171
Iron & Steel	1,217	949	1,670	+76	1,169
Nonferrous Metals	510	347	357	+ 3	350
Machinery	915	951	1,161	+22	1,129
Electrical Machinery	459	477	582	+22	559
Autos, Trucks & Parts	558	647	841	+30	791
Transportation Equipment (aircraft, ships, RR eqpt.)	370	363	399	+10	339
Other Metalworking	723	880	875	− 1	844
Chemicals	1,320	1,188	1,473	+24	1,502
Paper & Pulp	578	613	828	+35	704
Rubber	134	178	233	+31	247
Stone, Clay & Glass	399	542	603	+11	594
Petroleum Refining	665	692	754	+ 9	814
Food & Beverages	742	794	783	− 1	737
Textiles	288	343	361	+ 5	350
Miscellaneous Manufacturing	883	1,061	1,037	− 2	1,022
Petroleum Industry	4,819	5,220	5,154	− 1	5,077
Mining	394	415	395	− 5	297
Railroads	754	822	904	+10	1,012
Other Transportation & Communications	3,899	4,362	4,992	+14	4,491
Electric & Gas Utilities	6,088	5,876	6,066	+ 3	5,768
Commercial (1)	7,041	7,886	8,596	+ 9	7,564
ALL BUSINESS (2)	32,091	33,914	37,310	+10	34,566

** U. S. Department of Commerce, Securities and Exchange Commission, McGraw-Hill Department of Economics*

(1) Figure based on large chain, mail order and department stores, insurance companies, banks and other large commercial businesses

(2) Petroleum refining, included under both manufacturing and petroleum industry, is counted only once in the total

cutback is planned in drilling. Spending for refining and marketing will be raised in 1960.

Mining companies also plan to reduce capital spending in 1960. Only iron ore mining companies plan to boost expenditures for plant and equipment. The dip for the mining industry is planned at 5% to $395 million.

Plans for larger capital expenditures in 1960 are supported by the optimistic sales outlook for the year. An increase of 9% in the volume of sales of manufactured goods is foreseen for 1960. Anticipated increases range from 3% in the oil refining industry to 26% in the steel industry.

But every major industry within the manufacturing group expects larger sales volume in 1960 than in 1959. To these increases there may possibly be added sales volume lost in the final two or three months of this year because of the steel strike.

The big boost expected in steel sales is presumably based on an almost certain rebuilding of steel inventories.

A sales increase of 15% in 1960 is expected by the automotive industry. Machinery companies anticipate an 11% increase.

Homework OK, Professors Get Consulting Clearance

South Dakota's Board of Regents has adopted a resolution permitting its engineering faculty members to practice engineering as consultants.

The action came in reply to a request from the Consulting Engineers Association of South Dakota that "moonlighting" by college professors be banned (ENR Aug. 6, p. 27).

A special resolution adopted at last month's meeting of the Board of Regents recognized the protest of the consultants, but recognized also these advantages of permitting private practice by engineering faculty members:

- Keeps faculty members up to date.
- Adds to their prestige, for the benefit of their colleges.
- Makes teaching attractive to more good men.
- Offers challenge to increase productivity.

The regents further recognized that engineering practice by engineering educators is "nearly universal."

In issuing its approval of the practice, the board retained direction by insisting on conformance with a code of ethics, by precluding interference with faculty responsibilities and by warning against use of faculty position in securing professional engagements.

Each faculty member who does practice engineering in his spare time will have to report on his activities to his superiors and pay his institution for any use of its facilities.

Interstate Bridges: 3 Feet Higher

Vertical clearance on overhead structures on the Interstate Highway System will be increased from the present 14-ft minimum height to 17 ft. The reason: national defense.

The change already has been approved by the American Association of State Highway Officials. Formal approval of the Secretary of Commerce is expected.

The Department of Defense won White House endorsement several months ago for its request for higher bridges.

Bureau of Public Roads estimates it will take an additional $1 billion to get a nation-wide net of structures with 17-ft clearance. This breaks down to about $330 million in added costs to build some 10,000 future structures to the 17-ft height, and $700 million to raise an estimated 6,000 existing strustures to this weight.

Overall, it is estimated the new bridge heights will increase the total cost of Interstate bridges by 10%. Some existing, non-Interstate bridges will also be affected.

The Department of Defense wants the 17-ft clearance so that it can transport the huge Atlas and Titan intercontinental ballistic missiles across the country by land. The new height will accommodate any missiles currently envisioned by the Pentagon.

Some states now build bridges with clearances of 15 and 16 ft. But the armed forces insist they need the uniform 17-ft clearance to meet the country's defense needs.

The Pentagon's request was unanimously approved by AASHO at its annual meeting in Boston last month. The group's formal recommendation to Federal Highway Administrator Bertram D. Tallamy on October 23 proposed that:

"This policy shall apply to all rural Interstate Highways. In urban areas this policy shall apply to one route, preferably a belt route selected with the approval of the BPR so as to most economically connect the rural sections of the Interstate and defense highway routes."

AASHO also recommends that the 17-ft clearance extend over not only the pavement, but the entire width of the roadway, including usable shoulders. The AASHO proposals are considered to be identical with Pentagon and White House plans for the bridges.

Overhead clearances, the length of missiles and horizontal widths between tracks prevent wide use of railroads for missile hauling.

BPR says the new designs will become mandatory for all future construction immediately after the Secretary of Commerce approves the measure. It hasn't been decided yet when existing structures will be raised. Concensus now is that the military will specify existing structures on a priority basis.

Although no schedule for completion of the work has been arranged, it is expected that the Pentagon will want some rebuilding done within the next couple of years or sooner. Where it is possible to by-pass existing structures on the Interstate System, without inconvenience, they won't be raised.

There will also be some question as to whether general Treasury revenues should pay for increased bridge clearances. For new construction, the immediate plans are to tap the Highway Trust Fund. This means, a BPR spokesman says, that the cost must be absorbed in the current federal dollar allowances allocated to each state.

But there is speculation that Congress may change this financial arrangement when it reconvenes next year—particularly for costs of rebuilding existing structures.

This past summer there was strong feeling in Congress to have the national defense aspects of the new road system paid for out of general Treasury funds, as are other defense items, rather than from the special taxes levied on motorists.

Another possibility under discussion is to have truckers pay a share of the additional costs, since the new bridge heights may result in larger trucks that will earn more money from freight.

Who will pay how much of the added costs to the highway programs seems sure to be hotly debated in Congress.

Italian Builders Charged With Murder After Failure

A six-week investigation following the collapse of an apartment building in Barletta, Italy (ENR Sept. 24, p. 30; Oct. 15, p. 19) has produced these results:

- The government has arrested five men involved in the project on charges of murder—58 persons were killed.
- State District Attorney Giovanni Poli reports that building plans filed with the city called for addition of only three stories to the existing one-level structure, which was converted from a garage into apartments. But the builders added four stories.

The building inspector attached to the project allegedly accepted an unspecified sum to allow the bootleg top story. He, the state engineer attached to the Barletta Technical Office, the contractor, the owner and the construction superintendent are held on the murder charge.

PROBLEM: Ocean sloshes over sunken land in Long Beach, Calif., imperiling industrial area.

Water Buoys Land That Sank as

With attention to the old adage, "Nature abhors a vacuum," two huge water pumping plants were dedicated in southern California recently.

Their job: Supply water to replace oil drawn out of the ground.

The goal: Halt ground subsidence affecting 20 sq mi of the Long Beach waterfront area.

The problem is great. Land has sunk 26 ft at the center of a bowl-shaped area and 2 ft some nine miles from the center. And the ocean has come sloshing in, forcing buildings to be moved up onto fills.

Long Beach faces the loss of one-third of the industrial portion of its economy, including the Long Beach Naval Shipyard & Base. The facilities there are fast approaching the limits of subsidence they can withstand.

Horizontal movement in the Long Beach area has forced work on broken pipelines, sewer and storm drain lines, buckled railroad tracks, disturbed pavements and building cracks.

It has been necessary to shorten, replumb and jack bridge structures and to cut sections from building and wharf structures to relieve stress.

Roots of the present crisis go back to 1937, when the extensive Wilmington Oil Field went into production. Over the years, as oil was withdrawn, underground fluid pressures dropped from as high as 2,000 psi to as low as 200 psi. As resistance to ground weight fell off, the ground sank (ENR Feb. 5, 1953, p. 42).

Major part of the remedy is underground repressuring. Oxygen-free salt water under extremely high pressure is injected into oil-bearing sands and surrounding aquifers, restoring and maintaining the necessary underground pressure.

This is also a method of secondary recovery of oil that will enable oil operators to recover some 400 million barrels not otherwise recoverable. (The water forced into oil-bearing layers pushes the oil up through wells.)

Belief that the water injection method will solve the problem is strong. In an area already under treatment, subsidence seems to have been arrested in about 700 acres and the rate reduced in an additional 1,100 acres.

The two new plants—Terminal Island and Mainland—will inject water under a critical area that covers the Navy Shipyard.

The Mainland Plant is the largest in the recharging program. It cost $1,207,000, not including the cost of drilling 57 injection wells. It consists of eight horizontal, split-case, multistage, all stainless steel centrifugal pumps directly connected to 3,600-rpm squirrel-cage induction motors. Total design capacity is 12.6 mgd.

The Terminal Island Plant cost $670,000, plus cost of 41 injection wells. It serves all water injection wells on the island, including those whose well heads are in the Naval Shipyard. It consists of six pumps; proposed capacity is 6.9 mgd.

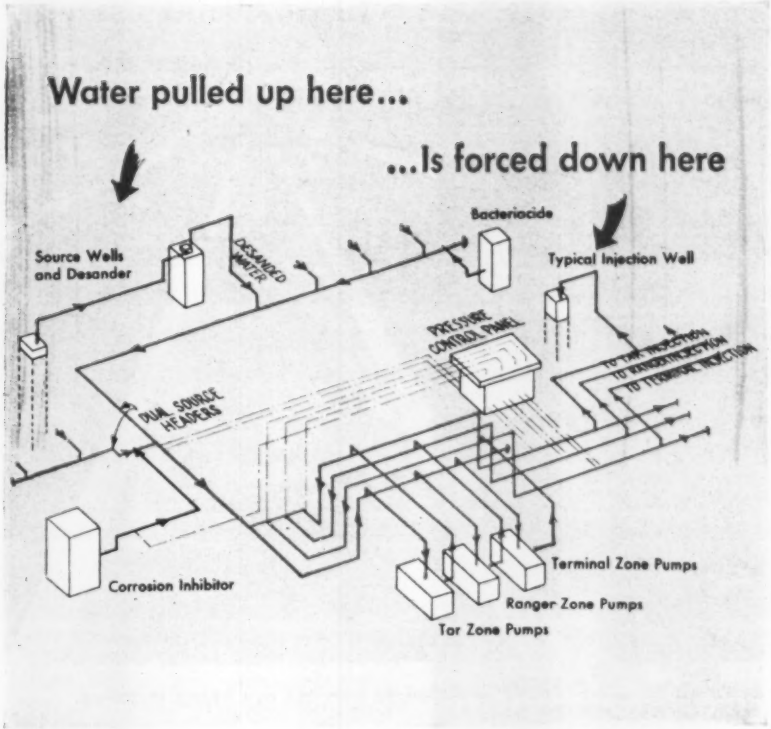
The system takes salt water from source wells and distributes it to the injection wells. There the water is injected into the subsurface zones at pressures ranging from 850 to 1,250 psi.

The water distribution system is a 20-mile network of steel pipe run above ground where possible and underground when necessary.

At each injection well head, an orifice-type meter measures and records the injection flow to the well. A flow-control valve in the line at each well regulates flow rates.

The natural filtration of the well water by the earth, and its low oxygen content, makes the well water preferable to untreated seawater. The well water is chemically treated to prevent bacteria growth and inhibit corrosion.

The pumping plants are designed for



ANSWER: Force down water to hold up land.

Oil Was Removed

possible expansion and for addition of booster pumps to increase initial design pressure by 200 psi.

There were substantial savings in using outdoor installations with weatherproof equipment instead of conventional totally enclosed plants. Automatic controls were incorporated to reduce to a minimum the number of operators needed.

The two new plants bring the field-wide total to eight, with a combined design capacity of 37.5 mgd. Eventual goal is 44 mgd.

Approximately 14.3 mgd are now being pumped underground. This is expected to go to 19.1 mgd by next January.

Nearly $90 million has been spent to date by the city, the Navy and oil companies to repair the damage caused by subsidence. Another $50 million might be needed if subsidence goes unhalted.

The oil field—largest in production in California and the second largest in the U. S.—has been in danger of being shut down by the U. S. government. But success with repressuring is changing the picture.

The government has tabled an injunction that could close the field down unless subsidence is controlled.

Harry E. Ridings, Jr., president of the Long Beach Harbor Commission, says that subsidence under the Navy installations can be halted in about six months.

The underground repressuring project is the largest in the world and has a projected cost of $30 million.

Cost of the water plants, which were financed by the City of Long Beach, will be recovered through a surcharge paid by oil operators on each barrel of water pumped underground.

One of the top battles that remains is the legal one of unitization. Cooperative agreements have paved the way for quick action, but agreement on oil division must be forthcoming from all oil operators and thousands of royalty owners before the job is over. To make the job easier and speed control, the field has been divided into six separate fault block unitization areas.

Officials estimate it will take 20 to 40 years to recover all the oil available, and pressure will have to be maintained for several years after that until equalization occurs.

The consulting engineering firm of M. A. Nishkian & Co., Long Beach, performed preliminary studies and final design for both plants and their water distribution system.

Soviet Ups Spending for Homebuilding, Industry

The Soviet Union's 1960 budget allocates nearly $13.5 billion for housing, more than $14 billion for transportation and communication, and about $70 billion to finance industry, including $4 billion for the construction materials industry.

All figures are at the official exchange rate—four rubles to one dollar (the tourist rate is 10 to 1).

The Soviet budget cannot be directly compared with the annual budgets of the U. S. federal government or with those of any other free economy. It is an outline of the total financial transactions of the state, which owns and controls all production.

Under the category "Transportation and Communication," for example, the Soviet budget would include money invested both in construction and in the productive facilities involved. In the U. S., on the other hand, a budget allocation for highways would involve only the money spent on building the roads; it would not include private investment in cement plants, steel mills and other facilities that contribute to road construction.

Russia plans a million new homes, 2.4 million apartment units this year.

Significant increases reportedly will be made in capital expenditures, although no precise industry breakdowns are yet available. State outlays in the "engineering industry" will go up 30%.

Plans Ready for Tallest Buildings on West Coast

San Francisco and Los Angeles, rivals in everything from baseball to entertaining Russian premiers, now each have plans for what will be the tallest buildings in their cities—and San Francisco's will be four stories higher.

The Bay City structure will be a 30-story apartment building costing approximately $10 million. San Francisco architect John Bolles is designing the building for Webb & Knapp, real estate developers.

Preliminary plans call for 360 units, a swimming pool (either in the basement or on the roof) many balconies and a lot of glass.

Demolition of three buildings on the 45,000-sq-ft Russian Hill site begins in January.

In Los Angeles the site is about to be cleared for the 26-story Pacific Tower Office Building, which will occupy 127,000 sq ft at Wilshire Boulevard and McCarthy Vista.

Charles Luckman Associates are architects-engineers for developer Atlas Terminals Inc. Ground will be broken in about 30 days.

OLD: Grass dividers were used on Jersey Turnpike . . .

NEW: Steel-plate barriers are being installed.

Making a Safe Highway Safer?

The most heavily travelled highway in the U. S. is being modified to make it safer—even though it is already one of the safest roads in the country. The highway is the New Jersey Turnpike, a six-lane bituminous ribbon linking New England and southern New York to the southeastern U. S.

The Turnpike Authority is installing steel-plate barriers between opposing traffic lanes. Grass strips have been doing the job. The barriers will be 2 ft high (picture), and will be built on all but 8½ miles of the 118-mile main line. The grass strips range from 20 ft to 96 ft, and are slightly raised. Much of the grass area will be paved.

Some barrier erection was completed in 1958, but only on a spot basis. Now, work has been started on the northernmost seven-mile stretch of the road.

Here, as on much of the turnpike, the median strip is 20 ft wide. A stabilized inside shoulder, less than 6 ft wide, offers inadequate parking space for disabled vehicles.

In most of this area a single lane barrier will be centered to serve both roadways. The barrier consists of a 10-gage plate, shaped in section like a "3" and bolted to spacers on 6 in. WF, 8.5 lb steel posts. These posts are 5 ft 9 in. long.

Heavy turnpike traffic makes the changeover complicated. But the procedure for installing the barriers is simple. Top soil is removed by a backhoe. Crushed stone is mounded in the median so that its crown is slightly higher than the adjacent roadway while its toe is clear of drainage catchbasins. A penetrating coat of bitumen is applied to the stone. (The treated stone adds stability to the barrier and it eliminates the need for grass cutting in the confined areas adjacent to and beneath the guard rail.) The barrier posts are driven in until their tops are 2 ft above the stabilized rock, and the guard rail is then bolted to the posts.

Turnpike officials are not certain they are justified in spending some $40,000 a mile for the installations. Nor are they certain that the barrier being installed is the best type.

One explanation for their doubts is found in the conflicting results of barrier studies throughout the country. Connecticut's experience with hedge and Floribunda rose bush dividers has been good. But in other parts of the country before-and-after checks indicate that, while median barriers reduce the number of fatalities resulting from accidents, they increase the number of accidents and injuries.

Conversely, Westchester County Police report that a barrier on New York's Hutchinson Parkway reduced the accident rate by 35%.

Three studies made in California since 1951 add to the confusion. On San Francisco's Bayshore Freeway, the accident rate was greatly reduced after installation of a barrier. But after installation of a similar unit on a Los Angeles freeway, the accident rate increased by 75% and the injury rate by 116%. On U. S. Rt. 99, the accident rate moved up 88% and the injury rate 53% after a barrier was erected.

A median barrier must do three things: prevent vehicles from crossing the median; cushion vehicle impact to prevent or minimize injuries; prevent vehicles striking it from being thrown sideways out of control into the path of following traffic. In accomplishing the first purpose, a median barrier often defeats the second two. Thus while a barrier may reduce or eliminate head-on crashes, it may greatly increase the number of same-direction accidents.

In 1958 the New Jersey Turnpike carried more than 41 million vehicles a total of 1.2 billion vehicle-miles. This year, it is expected to carry 46 million vehicles. The turnpike speed limit is 60 mph. Yet the fatality rate on the pike is only 2.4 per 100 million miles of travel. The nation-wide fatality rate is 5.6 per 100 million miles.

However, 17.1% of the deaths on the Jersey Turnpike were attributable to head-on collisions. The authority hopes the median barriers will eliminate these —without any increase in deaths or injuries from other types of accidents.

Design Bids Abroad

CEC urged to set up new procedures for proposals

The World Bank's engineering consultant last week urged consulting engineers to work for an internationally acceptable procedure for making proposals on international jobs.

Speaking before a board meeting of Consulting Engineers Council in Cincinnati, Gail A. Hathaway, former president of the American Society of Civil Engineers, who is now serving with the World Bank, pointed to the problem that arose early this year when an Asian nation asked for competitive lump-sum bids on engineering of a water resources project.

Eight U. S. firms were among the 29 that made proposals in response to the invitation.

But three of the eight suggested a percentage fee instead of the requested lump-sum bid, and three others cited professional rules preventing them from bidding, gave their qualifications and asked for an invitation to negotiate.

British consultants also found the bid invitation contrary to their practice, Mr. Hathaway pointed out. Now the Association of Consulting Engineers of Great Britain is seeking U. S. help in setting a more agreeable method.

Mr. Hathaway proposed that CEC work on the problem with the British group through the International Federation of Consulting Engineers (FIDIC).

On another subject, he urged the U. S. consultants to consider a policy established by FIDIC before the 3½-year-old CEC had joined it. This policy limits performance bond requirements to 10% of contract price—the normal practice in Europe, where premiums on performance bonds are much higher.

U. S. consults are running into trouble in asking foreign contractors for 50% to 100% bonds, Mr. Hathaway commented.

Mr. Hathaway noted that there is no U. S. participation in the International Federation of Building and Public Works. He suggested that the U. S. consultant's "hand would be greatly strengthened" in international matters if that organization had the support of a strong U. S. contracting association, such as the Associated General Contractors of America.

In its discussions, CEC's board poked a lance at what it considers "unfair" competition from manufacturers with engineering services, state highway departments, architects, government employees who do spare-time engineering, even "big consultants from out-of-state."

Montreal Factory Roof Collapses

Four workmen were killed and a score injured last week when a 120x 160-ft section of concrete roof slab collapsed in Montreal. The accident came as crews worked to place the last 100 cu yd of a 750-cu-yd pour on the roof of an addition to the Johnson & Johnson Ltd. surgical supplies plant.

Cause of the collapse was not known early this week. Forms and supporting shores were substantially constructed, said Frank Pagoto, head of Louis Donolo, Inc., Montreal, the general contractor. Form supports were placed in two directions and the structure rested on heavy 6 x 8-in. jacksills.

But at the time of the accident, winds were blowing at 45 mph. "They definitely could have had an effect," Mr. Pagoto said.

It had rained heavy for several days preceding the concreting, but the builder discounts this as a cause. He said material under the form structure was completely "run of crusher" materials without screenings. It varied in size from ¼ in. to 2 in. fully compacted.

The addition is a one-story structure of flat slab, reinforced concrete construction. Bays measure 30 x 32 ft, story height to the 9½-in.-thick slab is 20 ft. More than half the addition is in place.

The four men who died were all working beneath the roof deck.

Eye witness accounts vary on how the collapse started. One report indicated the deck first gave way at the center. Another suggests an end gave way first.

Workmen on the deck were placing concrete from two truck cranes. They rode the deck to the ground.

Architects-engineers for the job are Fleming & Smith. Dominic Support and Forms Co., Ltd., is forming contractor. Both are Montreal firms.

Expanded Uses Seen for Prestressed Concrete

"The prestressed concrete industry is growing up," said Noel Willis, Philadelphia Bridge engineer, at the fifth annual convention of the Prestressed Concrete Institute in Miami last week.

Pointing to widening use of prestressing, Mr. Willis listed these growth areas for the method:

- Longer span bridges.
- Home construction, both structurally and decoratively.
- Railroad ties.
- Jet runways.

The Institute elected Randall M. Dubois of the Freyssinet Co., New York City, president; vice president is Jacob O. Witlock of Midwest Prestressed Concrete Co., Springfield, Ill.;

(More news on p. 32)

engine power
BY CATERPILLAR

HERB TURNER TELLS CAT EXCAVATOR

1936—The performance of H. Turner & Son's first Cat Excavator Engine helped establish their company as one of the leading contracting firms in southwestern Wisconsin.

1959—More than twenty years later, this firm operates in several states with 81 Cat Engines in its spread.

WHY HE'S INSISTED ON ENGINES FOR OVER 20 YEARS

Herb Turner, Jr., president of H. Turner & Son, Contractors, has 81 Cat Engines in his spread. Why he does...and why he doesn't buy equipment if the engine brand he wants cannot be specified...makes interesting reading for contractors everywhere.

"Buying engine power is just as important today as it was when I bought my first Cat Diesel Engine in 1936.

"The performance of that engine could have meant success or failure to my business. While success or failure today doesn't count on a single engine, I can't afford to risk loss with an unreliable engine. So when I specify an engine, dependability is way ahead of everything else. That engine could be the reason for a job going down. For example, suppose I have an excavator loading a crusher on a road-paving job and the engine fails—crusher stops, haul units stop and perhaps graders and compactors.

"When selecting an engine, I'll specify the kind every time that has given me the best record of dependability. If a dealer resists selling me the engine I want, he may not get the excavator business either.

"Fortunately resistance is the exception rather than the rule. And no matter where I bought a Cat Engine, the Caterpillar Dealer has provided parts and excellent service wherever and whenever I have needed it."

Herb Turner Jr

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Change in Titan Bases Coming?

The Department of Defense is considering a major change in the construction of bases for the Titan intercontinental ballistic missile.

ICBM scientists want to study the possibility of firing the 110-ton Titans directly from the underground silos that shelter them from air attack.

At Titan bases now under construction, the 90-ft missiles must be elevated from their silos to surface level before they can be fired.

The Army Corps of Engineers has awarded a $2,186,500 contract for design and construction of experimental Titan silos at Vandenberg Air Force Base, Calif., to test the feasibility of underground firing. The new technique will be tried out with launchings into the Pacific.

The contract for the project went to Ralph A. Parsons Co., Los Angeles. It's an unusual contract for two reasons:

• **Parsons is already the architect-engineering contractor** on the project under a contract from the Air Force. The military services don't usually award construction to the A-E contractor.

• **The contract was awarded on a cost-plus-fixed-fee basis,** instead of on a fixed-price arrangement. The construction contract's face value is estimated at $300,000. But this covers only the early construction. The remainder of the $2.2-million contract is tentatively earmarked for design.

Pentagon's reasons for awarding the construction contract to Parsons, the A-E contractor, on a cost-plus instead of fixed-fee basis are:

• **The project has an extremely tight time schedule.** There was not enough time to shop around for fixed-price bids, says a Defense Department spokesman. The cost-plus award is considered a time-saver.

• **The project is experimental.** Research and development contracts for military hardware are always awarded on a cost-plus basis. The later stages of such projects, usually fabrication of prototypes, are usually handled by the firm responsible for the early study phases.

The Corps of Engineers stresses that it will exercise the normal supervision over the work.

Giant Rocket Test Stand Planned

Bids for construction of the biggest ballistic missile static test stand in the U. S. were opened in Los Angeles last week.

The test stand, which will be erected at Edwards Air Force Base, Calif., will be capable of withstanding a rocket thrust of 6 million lb.

The Del E. Webb Construction Co. of Phoenix, Ariz., submitted the low bid of $4,721,786, according to the Corps of Engineers.

The missile test stand will be a massive, buttressed concrete structure 120 ft high, exclusive of superstructure. It will cover an area 140 ft x 72.5 ft. Some of its walls will be from 4 ft to 5 ft thick.

Unlike previous test stands, the Edwards AFB unit will not be a cantilever structure projecting from the side of a cliff. Instead, it will be founded on a huge mat footing. A 67-ft-wide flame deflector bucket complicates the structure's design.

Concrete walls of the test stand will be post-tensioned with many 1⅛-in. high-strength cables to resist the tremendous upward thrust of the rocket engines.

The rocket device to be tested will be made up of four 1.5-million-lb-thrust rockets. This combination could be used to place extremely large satellites in orbit or for deep space probes.

The architect-engineer division of Aerojet-General Corp., Azusa, Calif., designed the Edwards test stand.

In addition to the testing structure, the project includes a support building, observation stations, an instrument tunnel, a liquid oxygen storage tank, and two water storage reservoirs with a combined capacity of 1.4 million gal.

New York Has Plans For First Industrial Park

New York City has preliminary plans for a 95-acre industrial park to be located in the Flatlands section of Brooklyn. If approved by the Board of Estimate, it will become the first publicly sponsored industrial park in the city.

The park would provide space for industry investment of $35 million to $45 million. Preliminary studies by Tippets-Abbett-McCarthy-Stratton, New York City, put site development costs at $7.5 million.

There would be no writedown on the development. In contrast with the Urban Redevelopment Board's plan for the city's west side residential modernization plan, minimum land sale price to a developer would reimburse the city's cost of land acquisition, utilities and demolition of existing structures. Estimated cost is $7.5 million.

E. H. Anson Dies; Gibbs & Hill Executive

Edward H. Anson, 56, senior vice president of Gibbs & Hill, Inc., died last week. He had been with the New York City engineering firm since 1931, and in his latest post since 1953.

He served as president of the American Institute of Consulting Engineers in 1957 and was active in other professional societies.

An electrical engineer by education, Mr. Anson was an authority on railway electrification and monorails.

After World War II, he helped plan and build harbor and industrial facilities and power stations for the French Supply Council.

Around the Country . . .

• **No answers yet**—Test truck traffic has piled up over 5 million miles of travel on the $22-million AASHO-sponsored test road near Ottawa, Ill., during the past year. Much has been learned regarding the load-carrying capacity of both rigid and flexible pavements. Results, however, will be kept under wraps until the research job is finished, probably sometime next year.

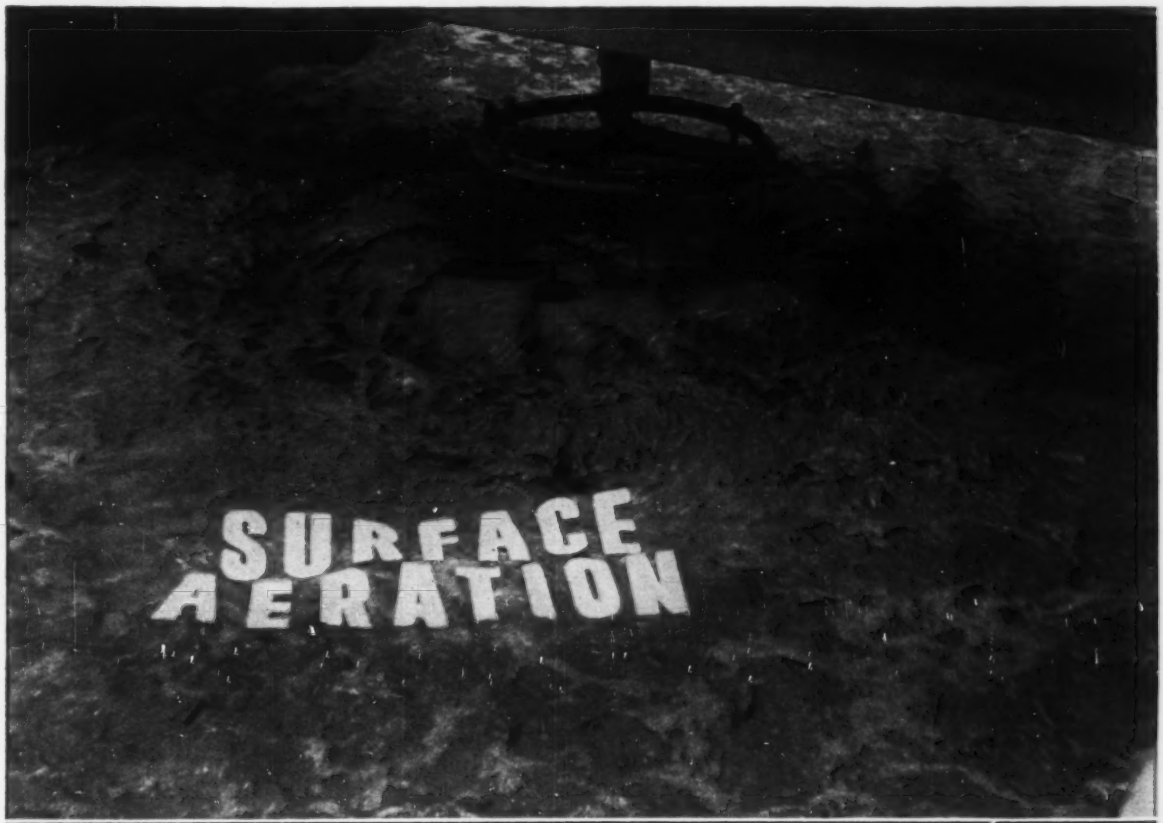
• **Precast vs. formed concrete**—Contractors are being asked by the Chicago Housing Authority to submit alternate bids by December 1 on three 16-story apartment buildings. One method includes lift slabs and precast concrete walls; the other, conventional formed concrete.

• **Need an engineer?**—Sixty Army Engineer civilian employees, ranging from engineering aids to construction supervisors, were thrown out of work when construction stopped at Richard I. Bong Air Force Base. To hire them, write or wire Personnel Office, U. S. Army Engineer District, Room 475 Merchandise Mart, Chicago 54, Ill.

• **All locked up**—A $9.6-million contract for construction of the Upper Lock on the Mississippi River at St. Anthony Falls, Minn., has been awarded to the joint venture of Al Johnson Construction Co., Minneapolis, and Peter Kiewitt Sons' Co., Omaha. Construction will start this month.

• **Bridge Apartments**—That housing project proposed to go over the eastern approach of the George Washington Bridge has been approved "in principle" by the New York City Planning Commission (ENR Sept. 24, p. 29).

CUTS SEWAGE TREATMENT COSTS UP TO 27%



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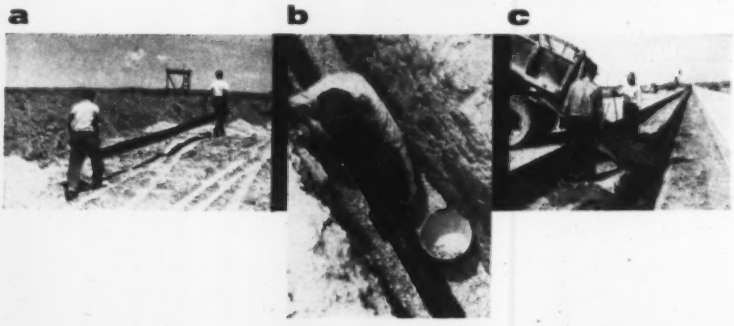

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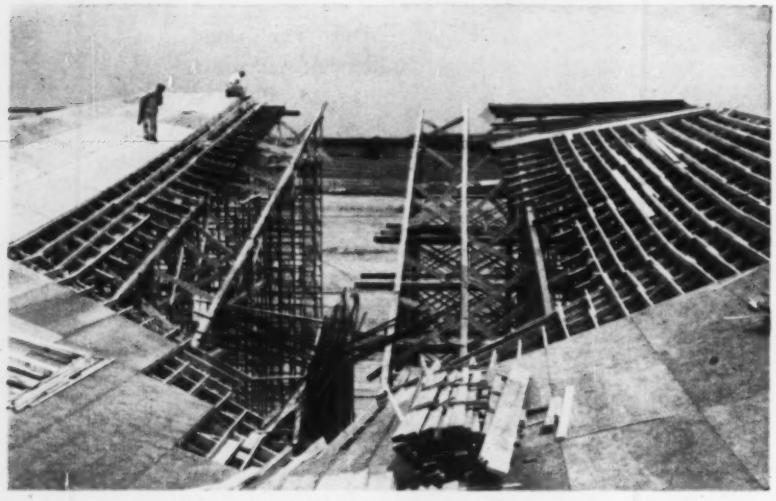
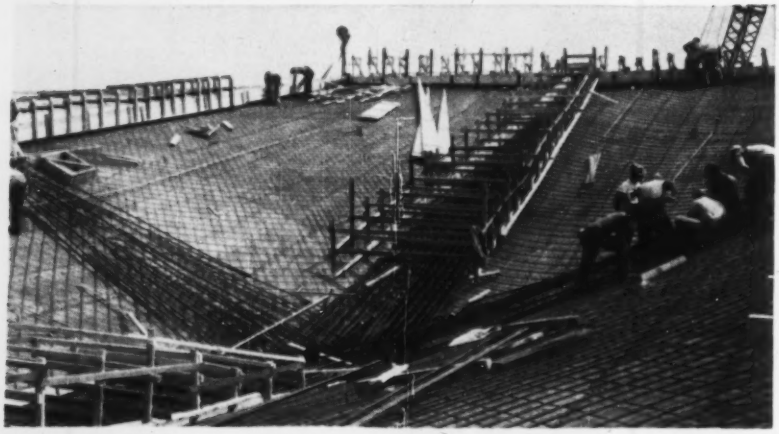
Hyperbolic-paraboloid concrete shells make this roof. Here's how the job was done . . .



Roof's curve was formed with slightly warped panels.

Precast, prestressed, double-T members



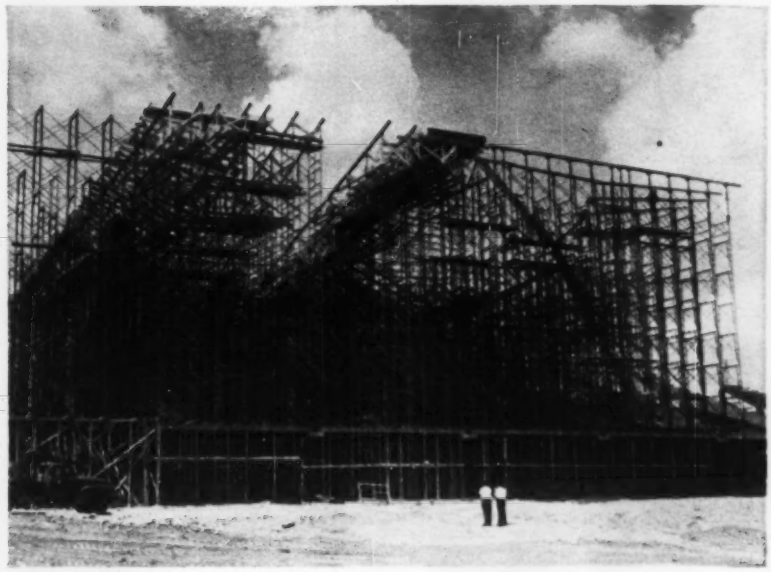
Network of steel bars reinforces the roof shell.

Grandstand

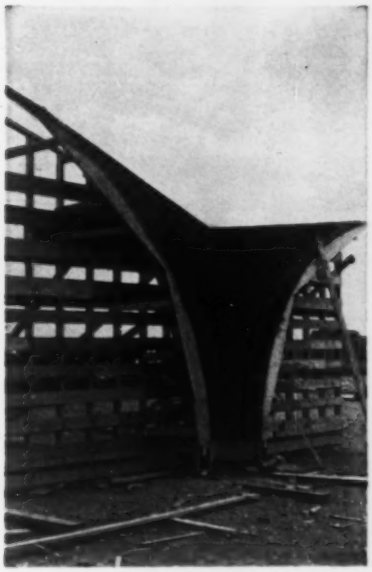
Columbus, Ohio, racing fans will be tearing up their tickets under inverted concrete umbrellas next spring.

The five umbrellas that form the grandstand roof at Scioto Downs are tilted hyperbolic-paraboloid shells of thin-shell concrete. Each shell is 60 ft by 116 ft, making the roof 300 ft by 116 ft over-all.

Each shell rests on a single column of reinforced concrete, 36 in. in dia. The front edges of the shell rise 65 ft above the track. Because of a backward tilt, the rear edges are 12 ft lower than the front. Shell thickness in front of the



Scaffolds rise 65 ft to support forms for concrete umbrellas . . .



Forms were prefabricated on ground.

form mezzanine floor.

Frame was cast in place, will support precast treads and risers.

Roof Is Made of Giant Umbrellas

supporting columns is 5 in.; back of the columns it is 4½ in.

Stiffeners are formed by two main ribs on the top surface of the shells, one in each primary direction. The ribs taper from a maximum of 2 ft, 1 in. at the center to approximately 1 ft at the edges. They are formed and cast integrally with the shell webs.

The shells are stabilized by thin concrete members. They extend from the rear edge of the umbrellas down to the rear of the grandstand frame.

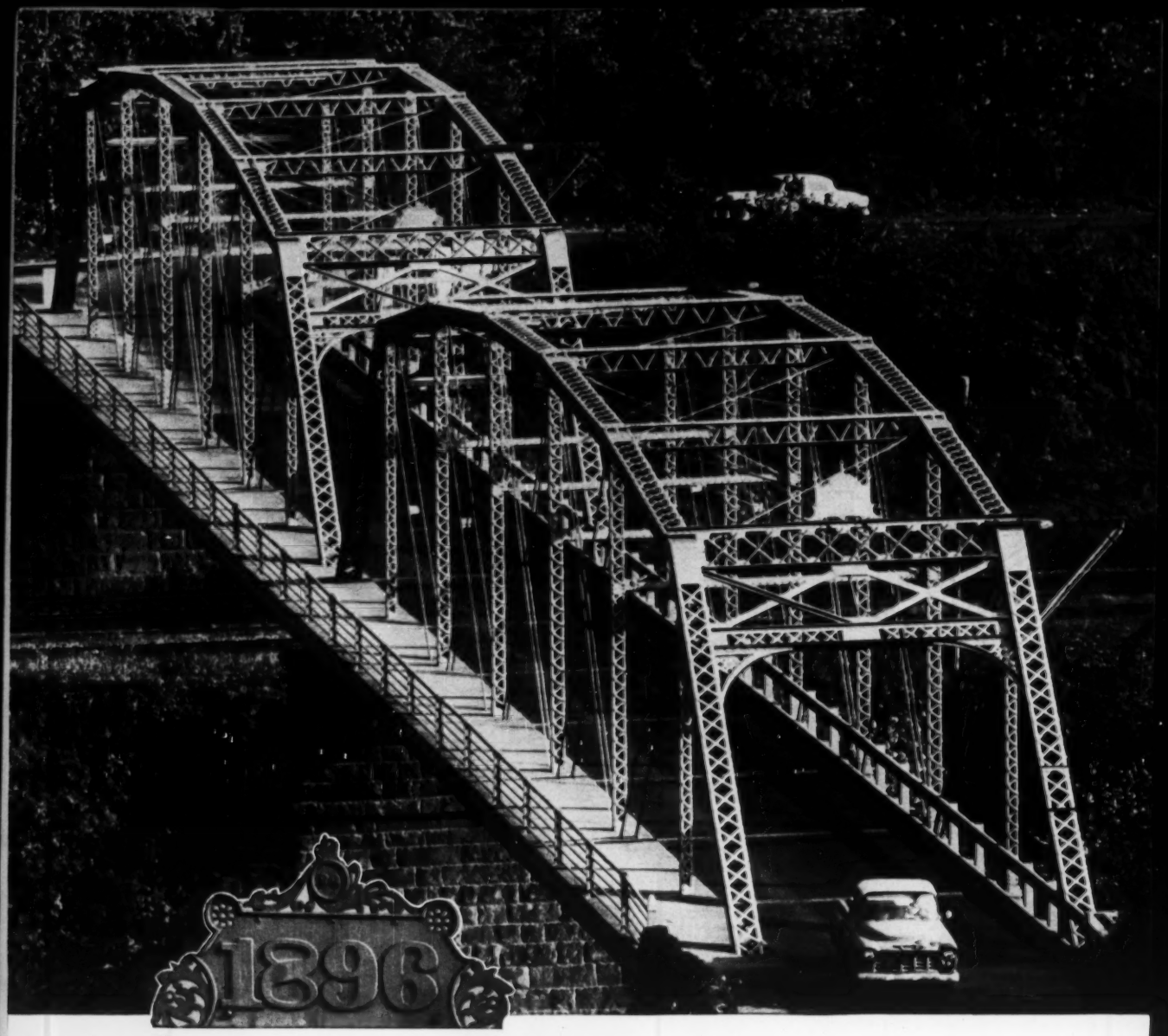
Corner deflection is restrained by spandrel beams, 1 ft, 4 in. wide by 1 ft, 8½ in. high, around each shell. Storm water is carried off by a 6-in. drain down the center of the columns, with an overflow safety drain in the middle shell surface.

The grandstand frame is cast-in-place concrete with precast, prestressed decking, risers and treads. Across the back of the grandstand is a continuous folded plate (not visible in photos) over the track offices.

The clubhouse roof also will have a folded plate roof, 100 by 160 ft and 4 in. thick.

Though only part of the racing plant is now finished, the track has opened for this year's racing season. Three of the five roof shells will be completed this month. The $2.25-million plant includes a 2,600-seat grandstand, concrete block barns with stalls for 600 horses, the clubhouse, a five-eighth of a mile track, milling space for 7,800 spectators and parking space for 5,000 autos. Completion is scheduled for next spring.

Kellam & Foley, Columbus, are the architects. Gensert, Williams & Associates, Cleveland, are the structural engineers. Sheaf Construction Co., Columbus, is the contractor.



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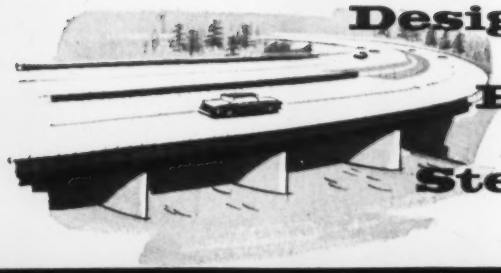

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Construction Consultants Needed?

- **Is there too much of a gap between "ivory tower" engineers and "down to earth" contractors?**

- **This author thinks so. He calls for wider use of construction consultants to bridge the gap.**

The time seems to be approaching when the independent construction consultant will fill a gap between the designer and the constructor that is becoming more and more evident.

How far apart are designers and constructors from an efficient team relationship?

Theirs is an estranged relationship. Let's look at it in a realistic manner.

Through 40 years of experience in engineering and construction I have seen the engineer-designer classed as an impractical theorist, and the constructor called a non-thinking duffer who would rather follow the rule of thumb than the slide rule.

Extreme? Far-fetched? Many think this was the case years ago, but not today. In this, they are wrong. This division is now ever greater.

This may be due to the refinements of specialization in design and to our highly technical era, with the engineer climbing higher on the ivory tower, out of calling distance from the realistic contractor on the ground.

That such an estrangement exists can at least be inferred from books, articles and discussions pleading for better relations between engineers and contractors.

In his book, "Construction Planning, Equipment and Methods," R. L. Peurifoy urges, in effect, that the contractor use more engineering principles in the planning of his work and that the engineer become more familiar with construction methods in order to design his work at the most reasonable cost.

With the existing divergence in thinking between the engineer and the contractor, what is the effect on the installation of the structures they both work on? Are these structures being completed at the most reasonable cost and in the most expeditious manner?

Many tales could be told of the lack of practical construction sense in the design of various structures, but that is not the intent of this article. Where impractical designs result in extra costs, the engineer is educated at the owner's expense. When the contractor commits an error, it usually comes out of his own pocket, but an engineer's slip can be somewhat of a break for the contractor, and at times even a bonanza.

Many years ago a noted engineer said engineering should be 10% technical knowledge and 90% common sense. We may disagree with these percentages, but we would agree that a good proportion of common sense should be wedded to the theoretical.

It has been maintained that the engineer's job is to design a structure so it can be built in the most practical, economical manner. But the multiplicity of extra claims and suits—even allowing for those arising from conditions beyond the control of the engineer or contractor—indicates a more practical common-sense approach is needed.

Many engineering concerns are fully cognizant of this situation and have well-grounded construction experience to overrule impractical ideas and designs. There are also many integrated engineer-constructor firms in this country that have a good balance between the theoretical and the practical. Such firms are answerable to the owner for both design and construction.

The more general American method of the separation of engineers and constructors does not exist to any great extent in other parts of the world. In many other countries the companies are integrated and carry a project through from original inception to final completion—usually for one price.

But the U. S. trend is away from integrated firms, largely because of the mass of public works and the trend toward more technical structures. This has also increased the size of the designing agencies, both private and governmental, and has thus tended to enlarge the gap between the theoretical and the practical.

Now, how about a way to bridge the gap between the office and the field. My suggestion may not be too welcome to the engineer—nor to the "extra-work" contractor. But it should be welcomed by the owners if they could become fully aware of the situation.

Set up construction consultants to advise engineers on their designs as related to the best economical construction. Such a class of consultants would need long experience in the construction business, plus technical background.

Such a consultant should be made a participant of engineering groups for large projects both in the planning and the design stages and especially in the supervision of the construction.

The construction consultant may be already in the making. Several consultants with many years of excellent and extensive construction experience are already following this line.

In the development of the military bases in Spain, the Bureau of Yards and Docks of the Navy set up an architect-engineer group and a construction contractor group. This latter group did little or no direct construction work; all or most of the work was let to other contractors on competitive bids. Thus this group acted in effect as construction managers and construction consultants to the architect-engineers and the Navy officials.

For the design of a large hydroelectric project for a foreign government, an American engineering firm was retained as consulting engineer, and an American construction firm as construction advisor.

In the early part of 1959, the Air Force set up a group to design certain ICBM launching facilities. In this group was a firm whose primary background was in construction work. Again, a case of the practical with the theoretical.

This trend toward the participation of the construction consultant in project development should be carried further by the various public agencies and should be brought forcibly to the attention of private business so that the division between the engineer and construction can be completely closed.

Such a relationship should pay big dividends in not only a saving on construction costs but also probably in more expeditious operations and better project results.

Let us hope the day arrives when the construction consultant will be fully accepted as part and parcel of project development. Let us tie engineering and construction together with the catalyst of the construction consultant and thus develop a balanced team that would show remarkable results in this nuclear age.

By Horace C. Crandall, *who was a heavy construction man for many years before becoming a consulting engineer in 1945. He has operated out of New York and Boston.*

Bus Terminal's Precast Frame

Going up: 100-ft long, 28-ton beam for terminal roof.

Buses take up a lot of room, especially when you have to build a terminal garage and maintenance shop for 275 of them. The Cleveland Transit System did it despite added headaches caused by a long narrow site.

CTS owned a 13-acre site on the west side of Cleveland, but it was only 305 ft wide. Allowing 50 ft for an access road along one side, there was just 255 ft left for the $1.6-million terminal. Dalton-Dalton Associates, the architect-engineers, worked out a plan that included:

- Four wide storage bays extending 360 ft along the 252-ft-wide terminal.
- A 100-ft-deep clear turnaround area across the center of the terminal.
- Two 60-ft-wide bays of maintenance shops, fuel stands and offices beyond the turnaround area across an end of the terminal.

Because of fire protection requirements and the long spans they had set for the design, the architects specified precast, prestressed concrete to cover the 144,000 sq ft of space.

Contract for the precast concrete was $375,000—just $2.60 per sq ft. Erection of the frame took only 36 working days.

The main storage area divides into two outside bays spanning 57 ft 10 in. and two inside bays spanning 67 ft 6 in. All four are separated by firewalls, but firewalls and doors at the end of these bays would hamper traffic flow in the turnaround area. The designers proposed deluge-type water curtains instead. The Cleveland Board of Building Standards accepted the idea, as long as 1½ hour protected construction was used and the whole building was sprinklered.

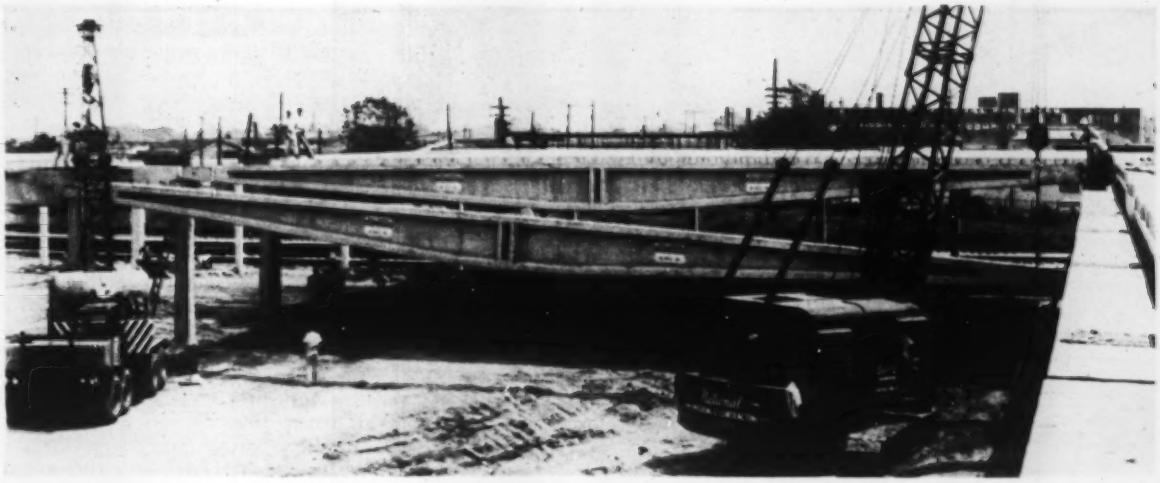
Outstanding features of the building are the 100-ft-long, I-shaped beams spanning the turnaround area. They are flat on top and tapered at the bottom from 60 in. deep at midspan to 20 in. at each end. Top and bottom flanges are 28 in., wide. Each beam weighs 28 tons.

They were prestressed with an initial force of 862 kips through 99¼-in.-dia high strength (240,000 psi) stress relieved wires arranged in nine tendons.

The engineers also cut costs by using the same basic shape for all 124 beams spanning the storage area and varying the amount of prestressing needed for the 57 and 67 ft spans.

By T. J. Gutt, *vice president of George Rackle & Sons Co., precast concrete fabricators and erectors for the Cleveland Bus Terminal project.*

Beats Space, Time and Cost



Ten 100-ft beams form a turning area, 250 ft wide, between shops and parking bays.

Even with long spans, keeping bay widths down allowed shallow roof decking across the bays. These channel planks also worked as tie beams between the girders, eliminating regular beams from the framing. Columns rise 18 ft and over the roof framing in precast channel-shaped roof decking 8 in. deep. Bays in the terminal are 20 ft wide.

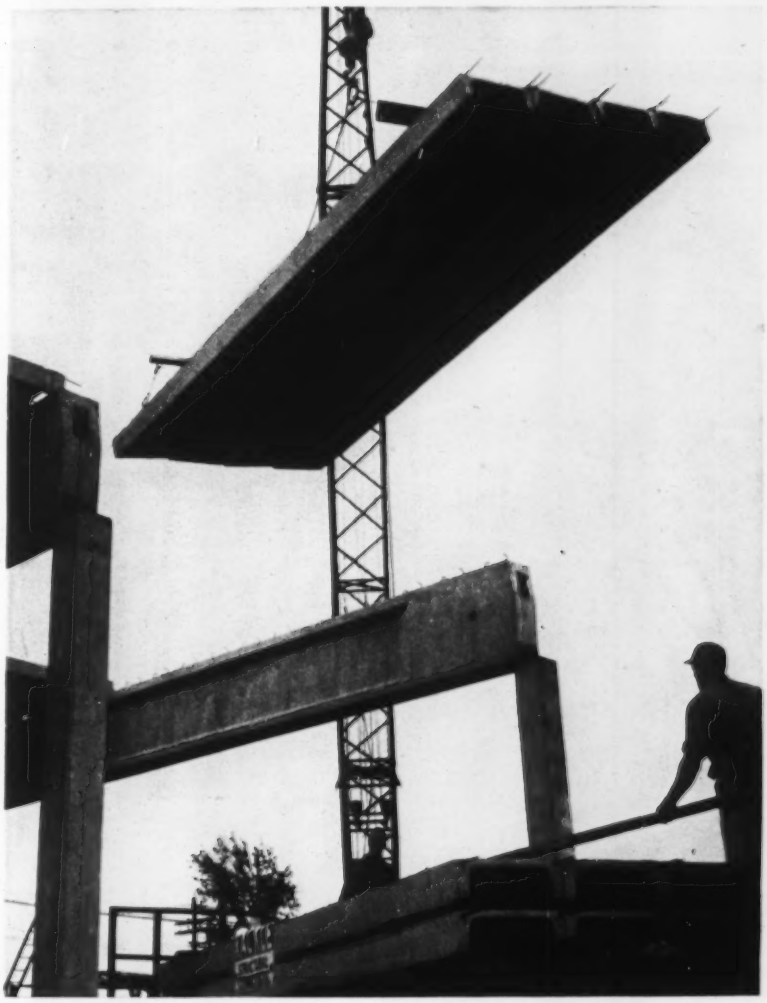
All the concrete structural units were plant cast with lightweight aggregate. Concrete strength varied from 4,000 to 6,000 psi for the various members.

Construction went like this: First, all columns were erected on drilled-caisson footings extending down 8 to 10 ft through a dense clay layer to shale. Then workmen placed prestressed girders and deck plank bay by bay.

The ten 100-ft-long beams were trucked 20 miles through Cleveland from the casting plant to the job on a tandem tractor and a four-wheel dolly with a hydraulic steering mechanism. They were erected with two cranes, a 50-ton-capacity crawler and a 35-ton-capacity truck crane. Other framing was handled by the crawler alone.

Deck planks went up four at a time. Erection really started in the casting plant. Roof plank were loaded four across on flat bed trucks just as they would sit in the completed building. At the site, workers attached lifting lines from spreader bars at each end of the plank and placed each set directly from the trailers. It took 175 truck loads to get all the material to the site.

General contractor for the project was National Engineering and Contracting Co., Cleveland. The George Rackle & Sons Co., Cleveland, fabricated and erected the precast frame.



Four roof panels were placed at a time, directly from trucks.

High-Boom Cranes: The Man's the Key

Handling 300 ft of boom and jib requires long experience, a steady hand.

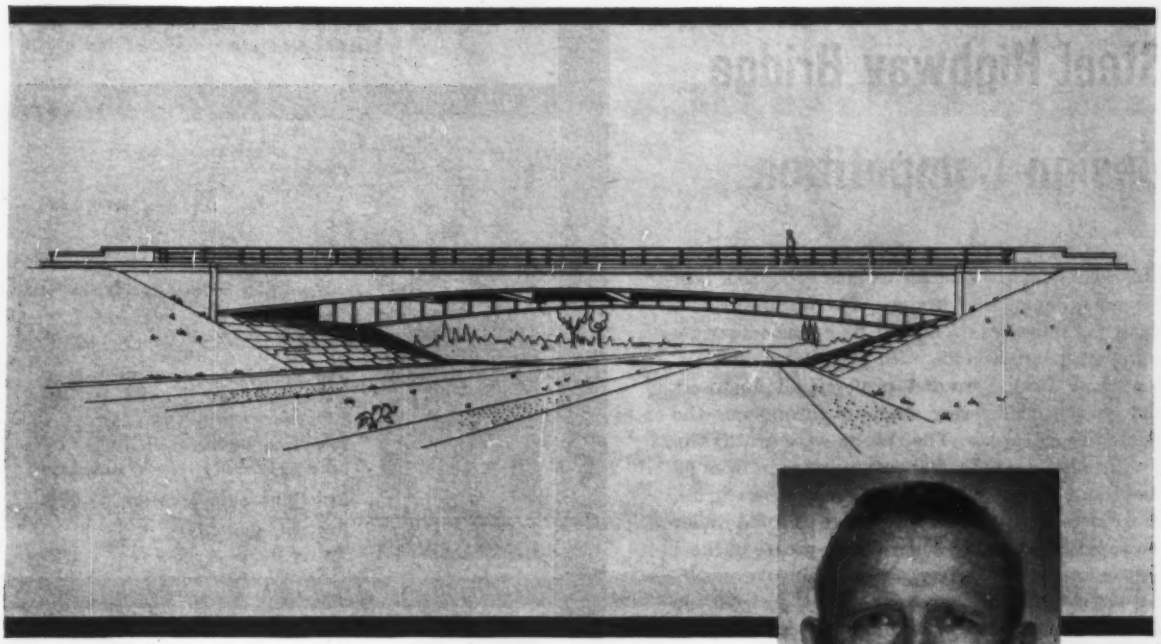
As crane booms reach higher and higher to do their work, the man in the cab becomes more important than ever before. It takes a steady hand and years of experience to handle the high-boom crane properly and get the best performance out of it.

Here are some pointers that every owner of these rigs should be sure his master-operators keep in mind when running high-boom rigs. They're from Charles and Joseph Castaldo of Castaldo Equipment Corp., Bronx, N. Y. The company owns and operates three of the latest model cranes, with up to 300 ft of boom and jib.

- **An operator should concentrate on the load and nothing else.**
- **Anticipate what the load will do.** If it starts to swing, turn with the movement—just as you'd steer into a skid when driving. Don't fight the load by swinging away from it.
- **Depend on the signal man.** He's there to see for you; don't try to outguess him.
- **Don't overreach.** Know the operating limits of the rig and stay well within them.
- **Install an indicator that shows just how far out the load is from the crane.** Inclinometers are fine but scale cards for each different length of boom are better. Use them for an exact reference to the distance between cab and load.
- **Operate on absolutely level ground.** One track just an inch or so above the other will completely change the operating characteristics of a high-boom rig even if it's on nominally level ground.
- **Check the rig's position before lifting a load.** Avoid at all costs having to move the machine with a load.
- **Keep the wind in mind.** Even without a breeze at ground level, there may be a real blast of wind cutting around the edge of a building 200 ft up. And wind direction will vary, too.
- **Be especially cautious with an unloaded boom.** Unloaded, there's no damper to steady the rig. And moving, keep the boom at a manageable angle.
- **Hoist cable marks have to be clear.** It's easy to miss a worn paint mark during takeup, particularly looking up the boom toward a clouded sky.
- **Above all, don't fight the crane.** Operate as smoothly as possible. Swing and stop slowly; hoist loads as evenly as possible.

The new high-boom cranes have an operating code all their own. It's actually the same set of rules your operator has used before—but it's more important than ever because of the longer reaches. And the key is common sense and good judgment.

This steel bridge design won $15,000



- Welded girder bridge
- Main span—160′—Total length—180′
- Concrete deck (composite action) 130 cu. yds.
- Steel weight—111 tons
  (58 tons Structural Carbon Steel
  53 tons USS TRI-TEN High Strength Steel)

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See following 3 pages for other winning entries in steel bridge design competition . . .

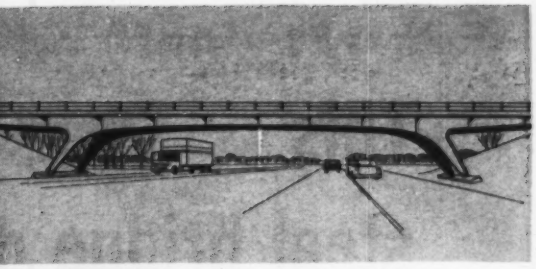
American Bridge announces the winners of the $44,000 Steel Highway Bridge Design Competition

American Bridge offered $44,000 for the best designs of small steel bridges. The bridges had to carry two-lane traffic over a four-lane interstate highway in accordance with AASHO standards. American Bridge invited professional engineers and college engineering students throughout the world to participate. The results were gratifying. By the deadline date, 300 designs were in from 50 states and 40 foreign countries. From these entries, 15 winners were chosen. They were selected under the supervision of the American Institute of Steel Construction. The judges were prominent consulting engineers and architects. They judged the designs on the basis of originality, economy, appearance and the utilization of steel.

In addition to the winners, a number of other interesting designs were received. They will be published later.

USS, Tri-Ten, AmBridge and I-Beam-Lok are registered trademarks

American Bridge Division of United States Steel

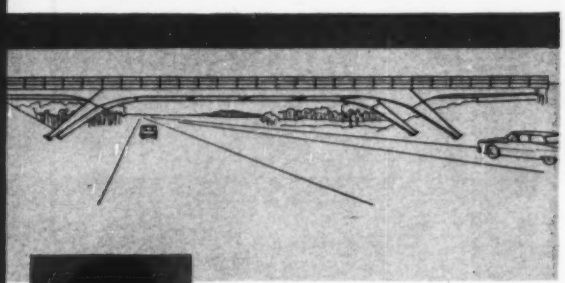


- Strut-framed bridge
- Main span—135'9½"
- Total length—204'
- Concrete deck—230 cu. yds.
- Steel weight—52 tons

Donald H. Olson
Two Harbors, Minn.

Jorgen Tvilstegaard
6833 Irving Avenue So.
Minneapolis 23, Minn.

1st Honorable Mention $10,000
Professional Class



- Strut-framed bridge with steel floor
- Main span—156'2" • Total length—205'
- 36" beams with fixed ends

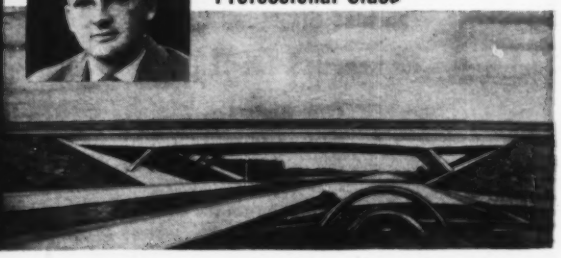
Klaus Wehrli-Bircher
Scheideggstrasse 95, Zurich, Switzerland

3rd Honorable Mention $1,000
Professional Class

- Continuous welded girder bridge
- Main span—113'9¼" • Total length—224'
- Steel weight—157 tons
- Filled 4¼" USS AmBridge I-Beam-Lok floor slab

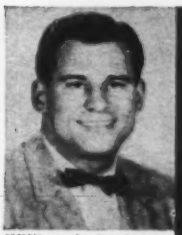
H. M. Brunt & J. D. Brunt
12 New Road, Aston Clinton
Sylesbury, Bucks, England

3rd Honorable Mention $1,000
Professional Class



Douglas M. Fraleigh
5401 Bonnimae Way
Sacramento, Cal.

Marvin A. Shulman
4436 Morpheus Lane
Sacramento, Cal.



William Jurkovich
2170—58th Avenue
Sacramento, Cal.

2nd Honorable Mention $5,000 Professional Class

- Two-span welded girder bridge • Spans—80′ • Total length—160′
- Concrete deck (composite action) 113 cu. yds.

- Wide flange beam bridge
- Main span—114′6″
- Total length—194′11″
- Concrete deck (composite action) 181 cu. yds.

Tsu-Ming Yang
821½ W. Lawrence
Springfield, Ill.

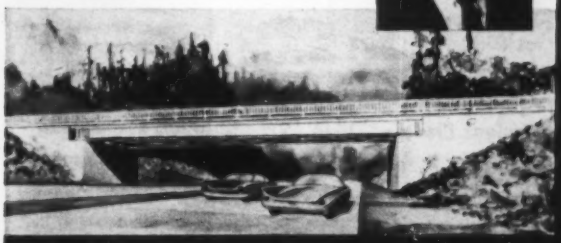
Muhittin Ozyurt
1414 Monument
Springfield, Ill.

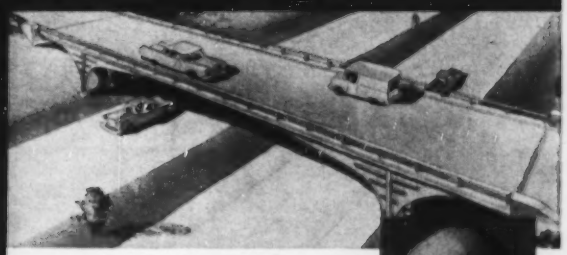
3rd Honorable Mention $1,000 Professional Class

- Beam bridge • Main span—112′
- Total length—124′6″
- 36″ beams with fixed ends

Harry R. Powell
Smith Tower, Seattle 4, Wash.

3rd Honorable Mention $1,000 Professional Class

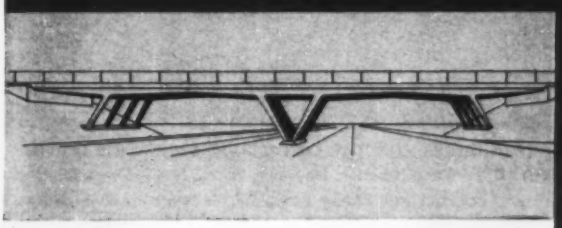




- Welded girder bridge
- Main span—124′ • Total length—178′
- Concrete deck—131 cu. yds.
- Steel weight—92½ tons

Robert J. Prowse
65 High Street, Concord, N. H.

3rd Honorable Mention $1,000 Professional Class



- Welded-deck arch bridge
- Main span—144′ • Total length—196′
- Deck 4¼″ filled USS AmBridge I-Beam-Lok
- Steel weight—68 tons (high strength steel)

James C. Costello
21 Leeson Park, Dublin, Ireland

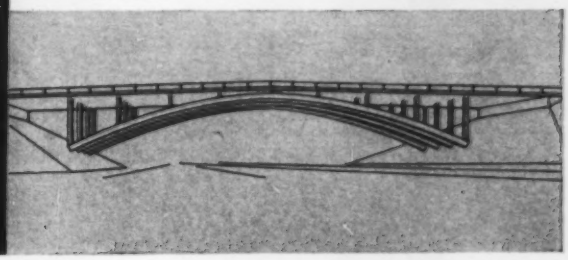
1st Honorable Mention $2,000 Student Class

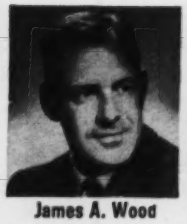
- Welded two-span frame bridge
- Spans each 47′ • Total length—162′
- Concrete slab—121 cu. yds.
- Steel weight—57 tons (USS TRI-TEN High Strength Steel)

Neils Jorgen Gimsing
Hattensens Alle 11, Copenhagen, Denmark

Hans Nyvold
Ulrikkenborg Alle 62, Lyngby, Denmark

1st Award $4,000 Student Class





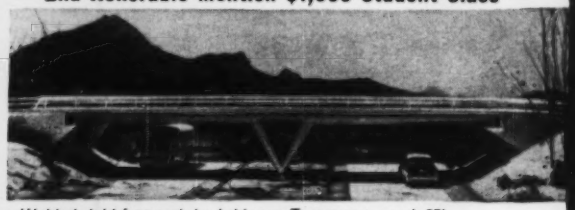
James A. Wood

Jack A. Berridge

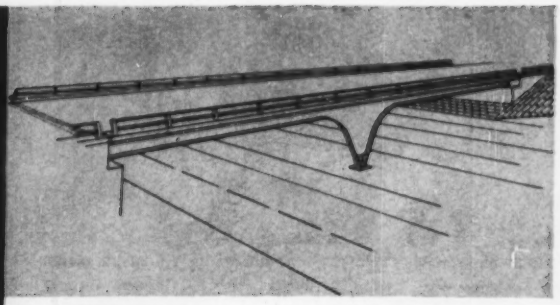
William O. Evers

Graduates of California State Polytechnic College

2nd Honorable Mention $1,000 Student Class



- Welded rigid-frame girder bridge • Two spans—each 57'
- Total length—114' • Steel weight—52 tons
- Filled USS AmBridge I-Beam-Lok deck



- Welded girder bridge
- Two spans—each 66'
- Total length—132'
- 4¼" filled USS AmBridge I-Beam-Lok deck
- Steel weight—43½ tons

Harland C. Zenk

Truman, Minnesota

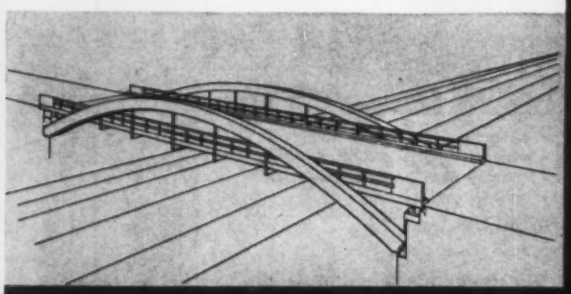
3rd Honorable Mention $500 Student Class

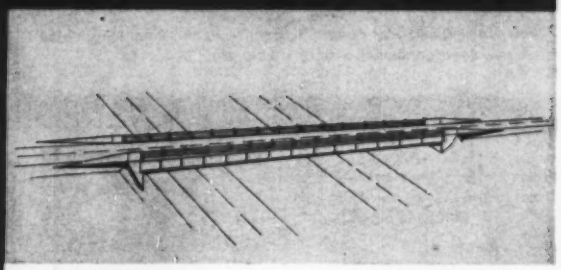
- Two-hinged arch bridge
- Span—149'4"
- Steel weight—85 tons
- Concrete deck—130 cu. yds.

Troy R. Roberts

Route 5, Neosho, Missouri

3rd Honorable Mention $500 Student Class





- Welded girder bridge
- Span—140'
- Deck 4¼" filled USS AmBridge I-Beam-Lok
- Steel weight—145 tons

Joseph A. Yura

629 North 23rd St.

Allentown, Penna.

3rd Honorable Mention $500 Student Class

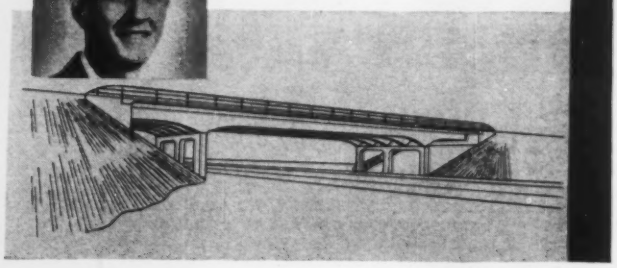
- Cantilever girder bridge
- Main span—120'
- Total length—180'
- Steel weight—103 tons
- Concrete deck—137 cu. yds.

Albert C. Knoell & Rodger K. Gieseke

Drexel Institute of Technology

Philadelphia, Penna.

3rd Honorable Mention $500 Student Class



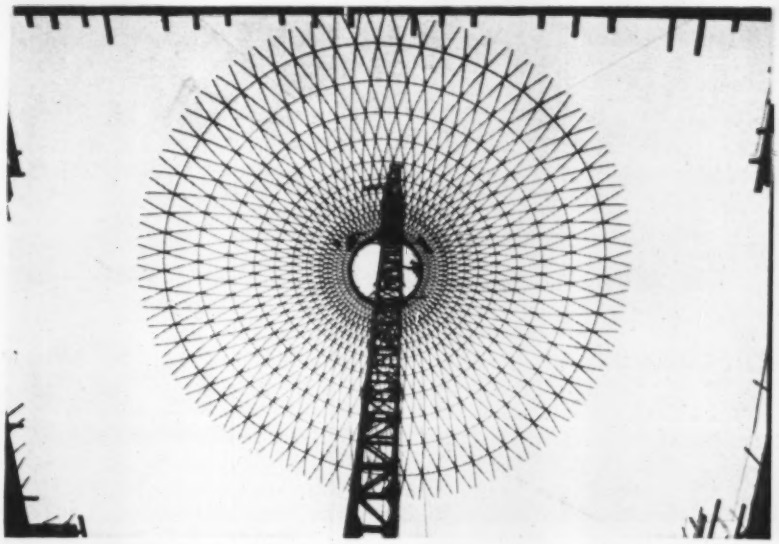
THE JUDGES FOR THE COMPETITION WERE (left to right) **Dr. C. E. Webb,** Okemos, Michigan; **W. E. Jessup,** Past Editor of CIVIL ENGINEERING; **Leon Chatelain, Jr.,** Past President, A.I.A.; **C. P. Hazelet,** Hazelet & Erdal; **L. A. Post,** Executive Vice President, American Institute of Steel Construction; **Eugene L. Macdonald,** Parsons, Brinckerhoff, Hall & Macdonald.

For detailed description of all winning entries, write to American Bridge Division, United States Steel, 525 William Penn Place, Pittsburgh 30, Pa.

USS American Bridge Division of United States Steel

International

This 300-Foot Ring . . .

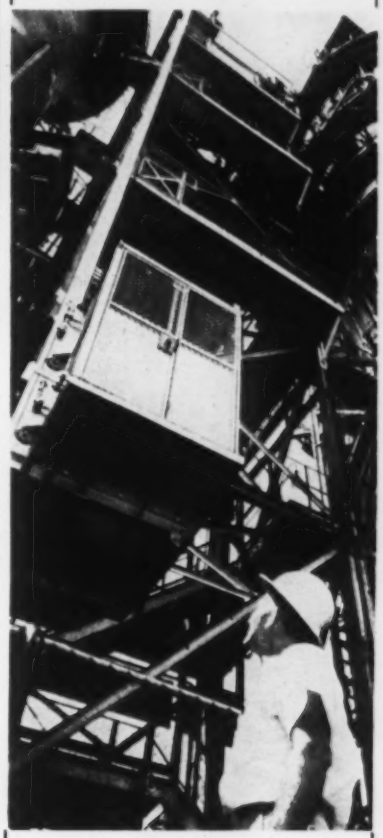


. . . Plus a Dome Frame . . .

. . . Makes Czech Fair Building

A tubular metal frame supports the dome of this Engineering Exhibits Pavilion at the Brno, Czechoslovakia, International Trade Fair. Top section of the 135-ft-high frame was hoisted into position after assembly at ground level. Workmen then added the lower dome sections.

Up In The AIR?



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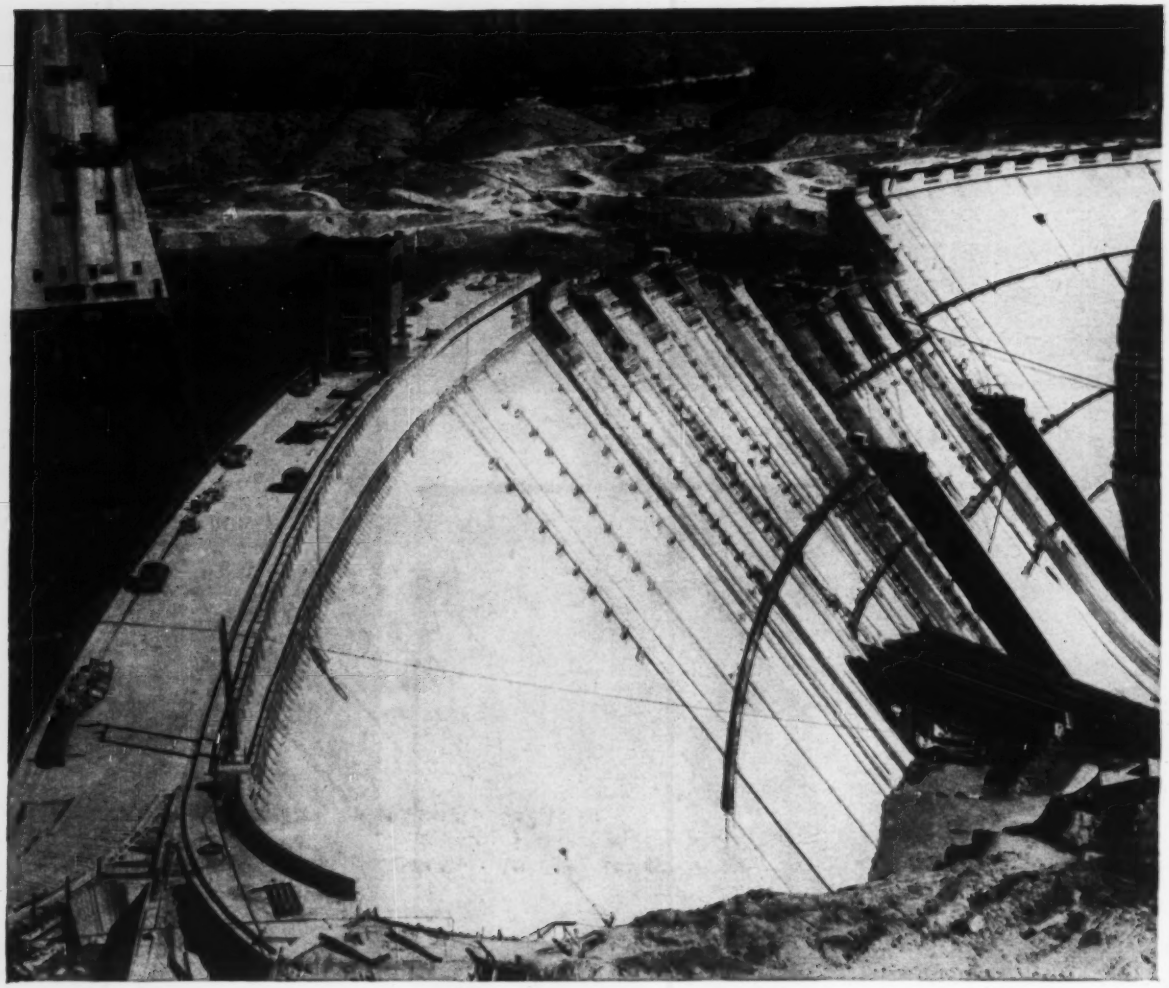
HAWKEYE

Portable Elevator

Eliminate costly "ladder time" with the completely portable Hawkeye Elevator. Elevator can be completely dismantled and re-erected in a new location in a few hours. Entire operation can be made by your own maintenance crew.

Valuable sales territories still available —for further information write to:

HAWKEYE PRODUCTS CORP.
222 Dey Building
Iowa City, Iowa



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fast, efficient, when and where you want it. You get that kind of service only from a company like Ætna Casualty, with more than 70 supervising offices in key cities and thousands of experienced agents from coast to coast!

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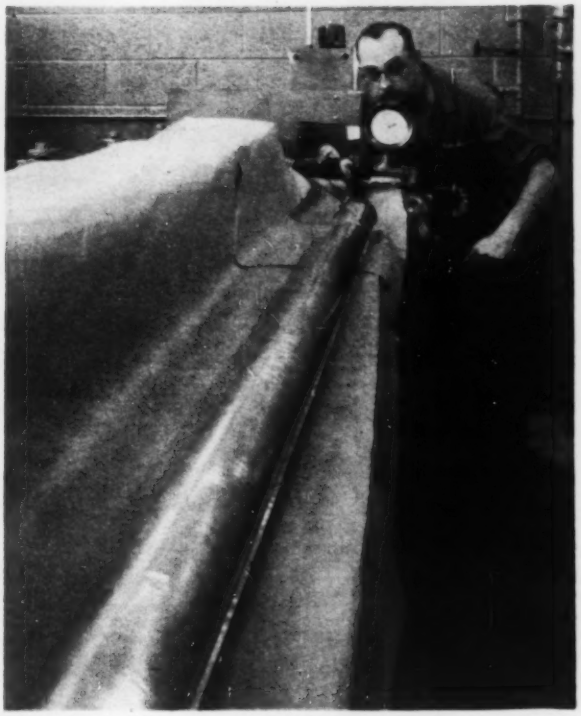
FLAT metal tubing is simply attached to water spout and . . .



INFLATED by hydraulic pressure. Or you can use air pressure.

Flat Tubing Inflates Like a Balloon

Calumet and Hecla, Inc., producer and fabricator of basic materials, is starting experimental production of a light-wall seamless metal tubing that can be shipped flat and inflated at the point of use.

The product, called "Strubing," will be manufactured by the company's Wolverine Tube Division, Allen Park, Mich.

Among the potential construction uses: downspouts, electrical conduit, heating systems, temporary field piping to transport water, fuel and compressed air and possibly for repairing leaks in sewer and water mains.

Strubing ribbon made of corrosion-resistant material might, for example, be inserted in a pipe or a tank and inflated to form an inner lining. No ripping up streets, no replacing sections of pipe.

For use in the field, truck-mounted Strubing reels would simply unwind the necessary tubing, then the strips would be inflated and coupled, ready for use.

The company's engineers have used hydraulic pressure, air pressure and mechanical means to inflate Strubing. In some sizes, tap water pressure will do the job.

The manufacturer says Strubing can be made smaller than the lead in a pencil or large enough for a man to walk through; it can be made as thin as household metal foil or as thick as conventional pipe.

It will be possible to ship Strubing in coil lengths of as much as 15,000 ft, the company reports.

Inherent in the manufacturing process is a pair of fins or ribs on the outside of the tubing. They provide added stiffness to thin-walled tube, but, if desirable, the fins can be removed as the tubing is being formed.

The manufacturing process is based on patents and patent applications held by inventor Howard A. Fromson of New York City. Calumet & Hecla has exclusive rights in the U. S. and Canada.

Stronger Titanium Alloy Ready

A new titanium alloy "far superior in strength, ductility, and toughness" to any comparable alloy now commercially available has been developed in the Research Division of New York University's College of Engineering.

In the laboratory, the alloy reportedly exhibited strengths in excess of 200,000 psi for the following ductility levels: an elongation of 8%; a reduction of area of 18%; an impact energy absorption of eight foot-pounds at 40 deg C.

Components fabricated from the alloy are reported to weight from 20% to 40% less than those fabricated from the highest-strength steels.

The new alloy is composed of 6% aluminum, 6% vanadium, 2% tin, 0.5% iron, 0.25% copper and 82.25% titanium.

It is the result of three years of research conducted by Harold Margolin, associate professor of metallurgical engineering, and Paul Farrar, assistant research scientist.

According to Mr. Margolin, titanium producers are supplying the new material to the U. S. armed forces.

"HERE'S WHY I PREFER CAST

A country-wide survey of consulting engineers, recently completed, asked this question: *What kind of pipe do you prefer for water distribution, and why?* Of the answers received, by far the greatest number named cast iron! Here are typical comments:

"Adequate factor of safety in practice to resist water hammer, heaving, heavy live loads. Ease of joint connections. Reliability in past service."

—Iowa

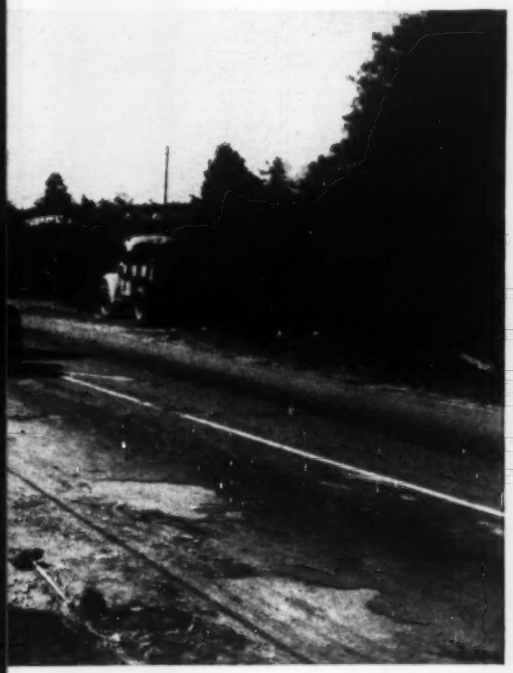
"Long service and favorable price of installation with least trouble from breaks and other maintenance problems."

—Virginia

"More satisfactory and tighter connections. Easier to make adjustments if actual measurements and fittings do not correspond with plans or if changes are made along the way."

—Illinois

IRON PIPE"

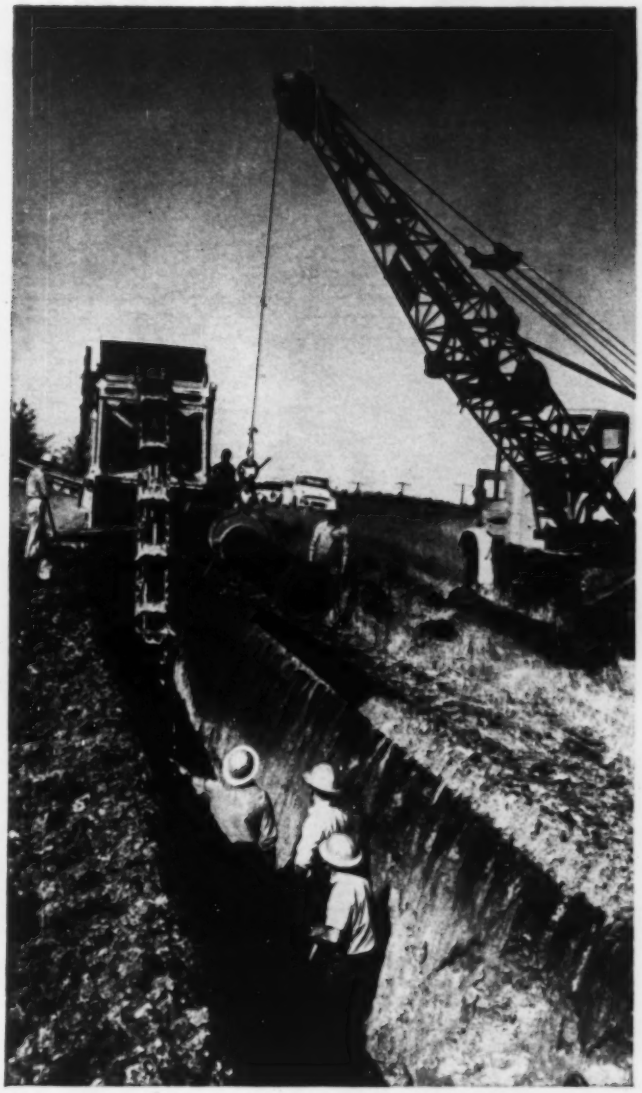


"1. Durability. 2. Uniform quality of installation, regardless of contractor's ability."

—Georgia

"Cast iron, being more physically rugged, can be installed with less supervision and less chance of subsequent failure due to improper bedding or loading conditions."

—Massachusetts



Three reasons why cast iron pipe is America's greatest water carrier:

1. More miles of underground cast iron water mains are now in use than of all other kinds of pipe combined.

2. More miles of cast iron water mains are now being purchased and laid than of any other kind of pipe.

3. Impartial surveys prove that today's water utility officials and consulting engineers prefer cast iron pipe for underground water distribution by an overwhelming majority.

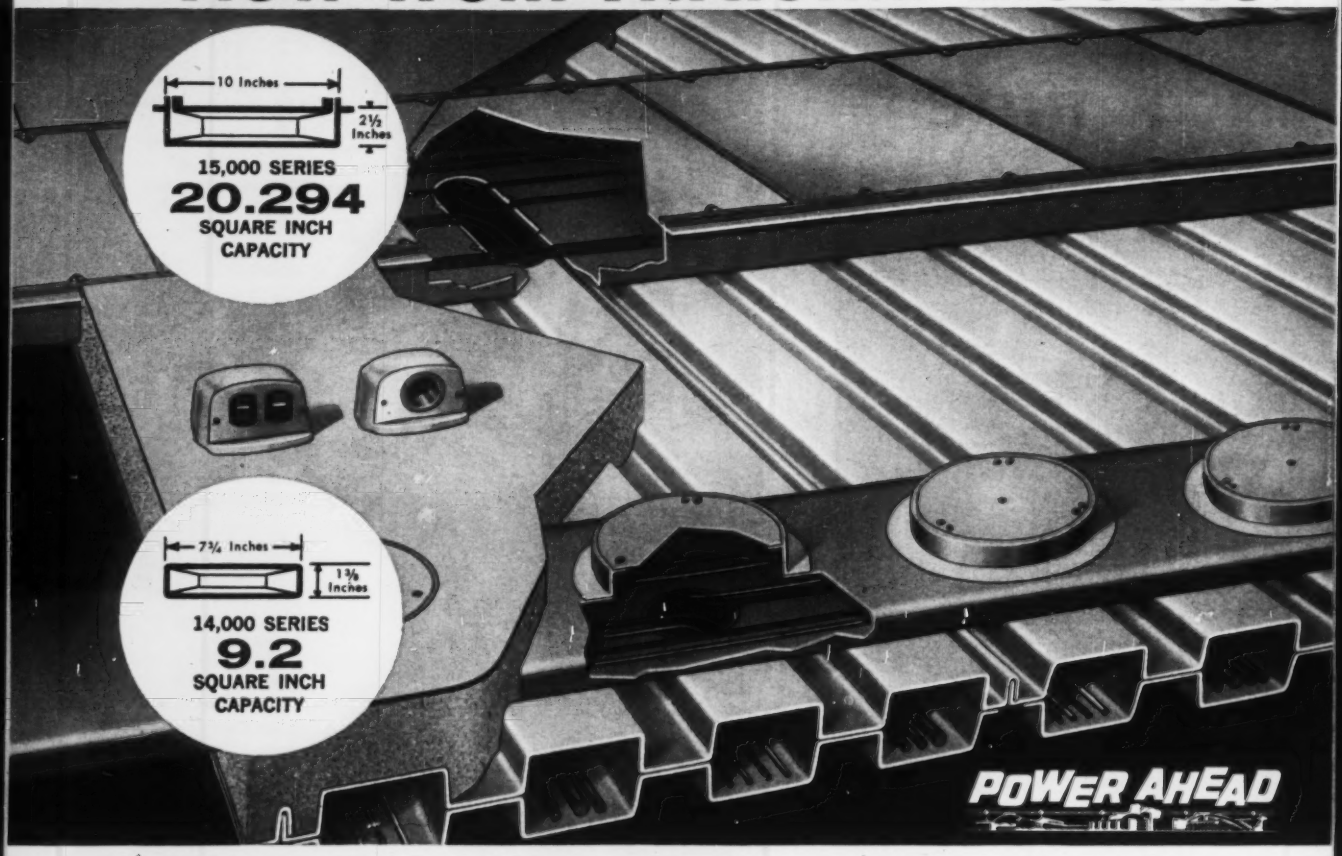
. . . good reasons for you to choose

CAST IRON PIPE

THE MARK OF THE 100-YEAR PIPE

Write for complete information to Cast Iron Pipe Research Association, Thos. F. Wolfe, Managing Director, 3440 Prudential Plaza, Chicago 1, Ill.

New from National Electric



TWO NEW STANDARD-DESIGN HEADERDUCT SYSTEMS NOW OFFER...

Selected for new $45 million Kaiser Center, Oakland, Calif. NE systems proved flexible enough to meet unique construction requirements and tremendous telephone feeder system wiring load. Welton Beckett & Associates, Architect and Consulting Engineers. Foothill Electric Company, Electrical Contractors.

LARGEST CAPACITY DUCT AVAILABLE

- Greatest wire capacity of any Headerduct provided in a standard design
- Greatest wire capacity at all feed points
- Fast installation—easy fishing. Quick access to entire system
- Strongest service fittings of any system
- Attractive modernistic design of service fittings harmonizes with modern as well as traditional architecture
- Most complete line of telephone service fittings
- U/L listed for *all* approved cellular steel floors
- Application engineering available

For complete information, write: *National Electric Division, H. K. Porter Company, Inc., Porter Building, Pittsburgh 19, Pa.*

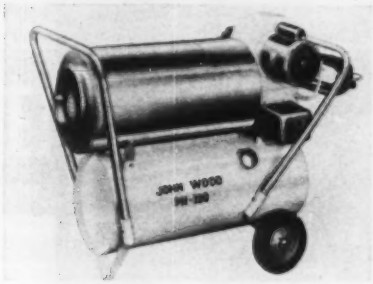
New large capacity cross box for the 14,000 Series has 11¼ inch opening for access to cells. Adjustment for 2⅜ to 2¾ inch concrete depth.

NATIONAL ELECTRIC DIVISION PORTER **H.K. PORTER COMPANY, INC.**

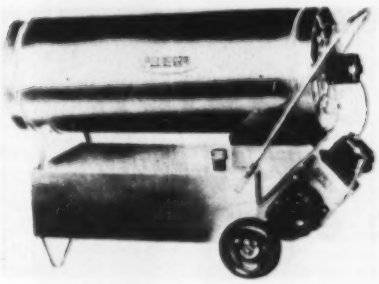
PORTER SERVES INDUSTRY: with Rubber and Friction Products—THERMOID DIVISION; Electrical Equipment—DELTA-STAR ELECTRIC DIVISION, NATIONAL ELECTRIC DIVISION, PEERLESS ELECTRIC DIVISION; Specialty Alloys—RIVERSIDE-ALLOY METAL DIVISION; Refractories—REFRACTORIES DIVISION; Electric Furnace Steel—CONNORS STEEL DIVISION, VULCAN-KIDD STEEL DIVISION; Fabricated Products—DISSTON DIVISION, FORGE AND FITTINGS DIVISION, LESCHEN WIRE ROPE DIVISION, MOULDINGS DIVISION, H. K. PORTER COMPANY de MEXICO, S. A.; and in Canada, Refractories, "Disston" Tools, "Federal" Wires and Cables, "Nepcoduct" Systems—H. K. PORTER COMPANY (CANADA) LTD.

Warm Air for Winter Work

Forced-Air Heater rated at 100,000 Btus per hour, combines the low-cost features of an oil burning Hy-Lo salamander with an induced draft blower. This provides large volumes of hot air at low cost, the maker states. Weight is only 33 lbs; cost, approximately $50. Scheu Products Co., Upland, Calif.

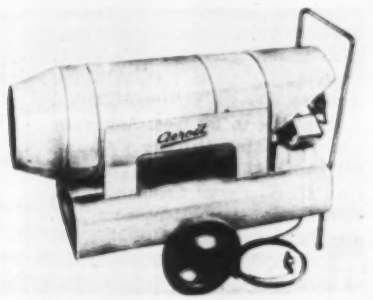


Model 120 portable heater needs no vent because its exclusive combustion chamber assures complete fuel burning, the manufacturer says. Rated at 120,000 Btu per hour, the 140-lb unit can be operated continuously for up to 16 hours. John Wood Co., Heater & Tank Div., Conshohocken, Pa.



Weather Master heaters operate automatically. The fuel tank has enough capacity for 18 hours of operation, the manufacturer says. Units are available at ratings of 200,000 and 300,000 Btus per hour with weights of 156 and 175 lbs. Siebring Mfg. Co., George, Iowa.

Porto-Heat units are available in two sizes—producing 120,000 or 240,000 Btu per hour with manual, semi- and full automatic control. Both sizes are wheeled; weights are 115 and 135 lbs. Fuel is either kerosene, No. 1 or No. 2 fuel oil. Emglo Products Corp., Johnstown, Pa.



Aeroil Heaters are available in three models rated at 125,000, 250,000 and 500,000 Btu per hour using kerosene or No. 2 fuel oil. Continuous ignition is assured by a 10,000 volt transformer, the maker states. Aeroil Products Co., 125 Wesley St., South Hackensack, N. J.

(*New Products continued p. 56*)

SHLAGRO TAPERED GIRDERS

TAPER YOUR COSTS

- SPANS FROM 24'0" to 130'0"
- FAST DELIVERY — MADE FROM PLATES IN STOCK

For Roofs For Floors

- Maximum strength — minimum materials.
- For fast delivery — welded plate construction, plates always in stock.

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SHLAGRO Tapered Girder

SHLAGRO

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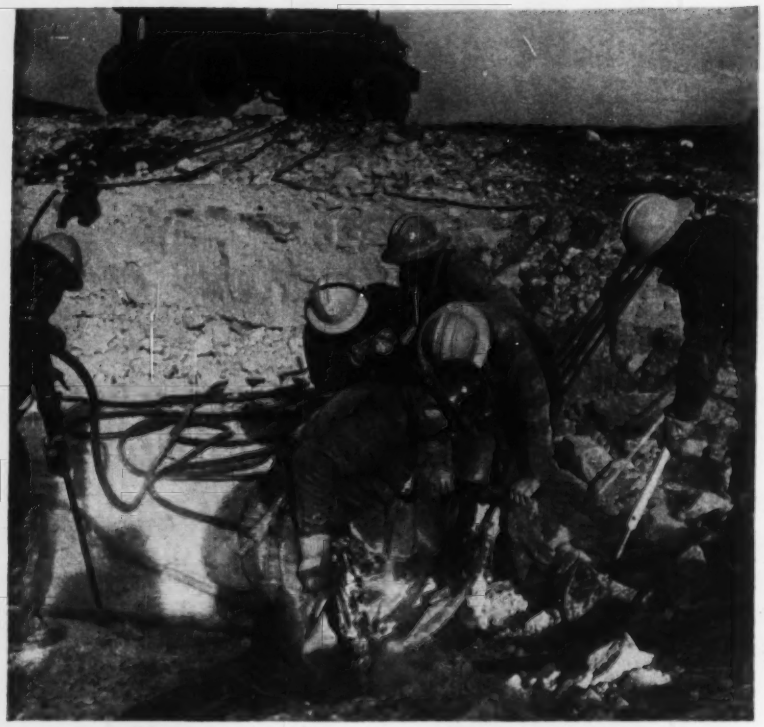
- ☐ #200 — SQUARE STEEL COLUMNS
- ☐ #225 — KARRI-MORE SQUARE COLUMNS
- ☐ #250 — SHLAGRO SHEAR HEADS
- ☐ #300 — STOCK STEEL TURNTABLES
- ☐ #350 — SCAFFOLDING
- ☐ #375 — SHLAGRO NO-DIAGONAL LONGSPAN JOISTS
- ☐ #400 — EGG-SHELL STEEL PLATE ROOFS
- ☐ #450 — SHLAGRO DOME STRUCTURES
- ☐ #500 — STOCK STEEL RIGID FRAMES
- ☐ #550 — STOCK STEEL VERTICAL MEMBER TRUSSES
- ☐ #600 — STEEL VERTICAL LIFT DOORS
- ☐ #650 — NO SHELL PRE-CAST FIREPROOF REINFORCED CONCRETE COLUMNS
- ☐ #700 — STEEL FLOORSPAN GIRDERS
- ☐ #735 — SHLAGRO TRIANGULAR GIRDER
- ☐ #750 — STEEL WELDED PIPE TRUSSES
- ☐ #775 — KARRI-MORE BEAM AND GIRDER
- ☐ #800 — STOCK STEEL MOMENT CONTOUR BEAM AND GIRDER
- ☐ #850 — PREFAB BUILDINGS — FLAT ROOF
- ☐ #875 — PREFAB BUILDINGS — PITCH ROOF

name_____

title_____

Please attach to your professional letterhead and mail to:

SHLAGRO STEEL PRODUCTS CORP.
SOMERVILLE, MASS. EN-11



Quaker
Thermoid THUNDERBIRD
...the toughest (yet most flexible)
air hose you've ever used

Give Thermoid-Quaker THUNDERBIRD Wire-Braid Hose the works . . . the roughest kind of impact, twisting, crushing, inside pressures. It'll take everything you can deal out, and then some.

THUNDERBIRD takes this punishment while remaining the most flexible, non-kinking air hose you've set eyes upon. Accurately-controlled angle of wire braid assures this extreme flexibility. Tough neoprene tube resists hot or cold oil. Yellow neoprene cover provides maximum abrasion-resistance and high visibility even in the dark.

Sizes from 3/8" to 4" I.D. Working pressures to 400 psi air or 2,000 psi water. Lengths to 50 feet. Ask your Thermoid distributor about THUNDERBIRD, or write *Thermoid Division, H. K. Porter Company, Inc., Tacony & Comly Sts., Philadelphia 24, Pa.*

THERMOID PORTER DIVISION

H.K. PORTER COMPANY, INC.

PORTER SERVES INDUSTRY: with Rubber and Friction Products—THERMOID DIVISION; Electrical Equipment—DELTA-STAR ELECTRIC DIVISION, NATIONAL ELECTRIC DIVISION; Specialty Alloys—RIVERSIDE-ALLOY METAL DIVISION; Refractories—REFRACTORIES DIVISION; Electric Furnace Steel—CONNORS STEEL DIVISION, VULCAN-KIDD STEEL DIVISION; Fabricated Products—DISSTON DIVISION, FORGE AND FITTINGS DIVISION, LESCHEN WIRE ROPE DIVISION, MOULDINGS DIVISION, H. K. PORTER COMPANY de MEXICO, S. A.; and in Canada, Refractories, "Dissston" Tools, "Federal" Wires and Cables, "Nepcoduct" Systems—H. K. PORTER COMPANY (CANADA) LTD.

Automatic Heater Keeps Engine Temperatures Up

The Thermo-Temp engine heater automatically maintains operating temperature in the cooling systems of gasoline, diesel and propane fueled engines when the engine is not running.

It eliminates low-temperature starting problems and cold engine wear, according to the manufacturer.

When installed, it becomes an integral part of the cooling system, operates on the engine's own fuel supply and doesn't interfere with normal engine functioning.

A dashboard control switch can be set on "automatic" to maintain constant engine temperature or a timer can be set from 5 minutes to 12 hours to preheat the engine before starting. The heater is priced at about $130. THERMO-TEMP INDUSTRIES, INC., 7712 SECOND, DETROIT 2, MICH.

Btu Meter Measures Air Conditioning Systems

A mechanical Btu meter measures refrigeration or heating furnished by central air conditioning systems, which use either chilled or hot water.

The Model 200 Btu Meter multiplies temperature change of the water by the flow. Two counters register the heat transferred and the water flow. Differential temperature is also indicated.

The meter may be located up to 10 ft away from the flow measuring element in a position convenient for reading and checking. Any water volume above 0.25 gpm can be metered. Prices start at $550. AMERICAN METER CO., P. O. Box 309, GARLAND, TEX.

One Yard Tractor-Shovel Lifts and Carries 7,000 Lb

The Model 55-A, a 1-cu-yd-capacity tractor-shovel, has four-wheel drive and can reach speeds of 26 mph.

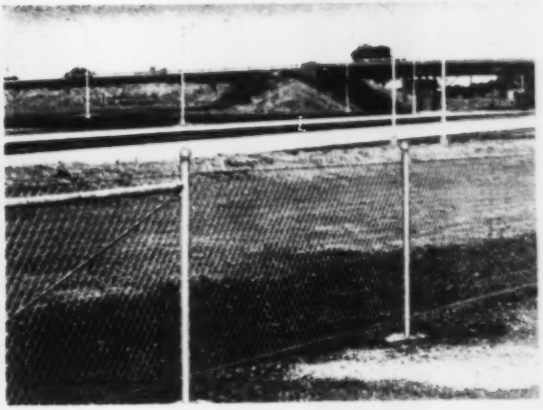
The machine will lift and carry up to 7,000 lb. It comes with a 66.5-hp gasoline engine and a working weight of 10,500 lb. Maximum dumping height is 8 ft.

Four-speed forward and reverse power shift transmission, planetary wheel axles and torque converter are standard equipment.

Low-pressure, wide-base tubeless tires are standard; abrasive-resistant rock tires are available. CONSTRUCTION MACHINERY DIV., CLARK EQUIPMENT CO., PIPESTONE RD., BENTON HARBOR, MICH.

(*New Products continued p. 61*)

Aluminum means MILES OF DURABLE FENCE



Chain Link Fencing of Alcoa Aluminum in use throughout the U. S. A.

One of the first aluminum chain link fences, installed over 30 years ago, stands today, unaffected by highly corrosive atmosphere and extremes of weather, its usefulness unimpaired. Today, Alcoa® Aluminum for chain link fencing and fittings is better than ever.

Improved alloys retain their high strength indefinitely. In time, the surface ages to a harmonious gray. No maintenance is required, and chain link fencing of Alcoa Aluminum permanently enhances the natural beauty of the landscape along right of ways, around toll-road entrances and down divider strips. Plantings can be made without concern for repainting or spraying foliage.

Check these other advantages you get with Alcoa Aluminum:

High Strength—Minimum tensile strength of Alcoa's new alloy is 54,000 psi.

Easy Erection—Light weight means less labor.

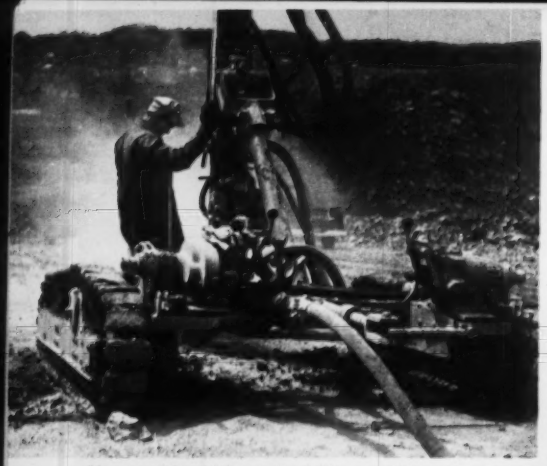
Readily Available—Reliable manufacturers and erectors in 48 states. Contact your nearest Alcoa sales office.

For your copy of 12-page illustrated booklet and a summary of recently bid prices on 4-ft-high and 6-ft-high all-aluminum fencing, write to Aluminum Company of America, 2056-L Alcoa Building, Pittsburgh 19, Pa.

ALCOA ALUMINUM

Your Guide to the Best in Aluminum Value

For Exciting Drama Watch "Alcoa Theatre," Alternate Mondays, NBC-TV, and "Alcoa Presents," Every Tuesday, ABC-TV



No trouble with rock drills on this job reports Ralph E. Mills Company, Frankfort, Kentucky. This drill is lubricated with Gulf Rock Drill 63, a special lubricant for air-operated tools.

Mills men check with the Gulf man. Left to right: W. A. Ferguson, Superintendent, Ralph E. Mills Company; E. W. Mueller, Gulf Sales Representative and Emmett W. Mills, Assistant Superintendent, Ralph E. Mills Company, Frankfort, Kentucky.

Man-made pass through Thorn Hill on the outskirts of Frankfort, Ky., where Ralph E. Mills Co. cut a 400,000-yard slice through solid limestone. All equipment serviced with Gulf fuels and lubricants.

Speeds 400,000-yard cut through solid rock using Gulf

GULF MAKES THINGS

One of the largest rock cuts ever made in Kentucky was recently completed by Ralph E. Mills Company, Inc., general contractors. The cut makes way for a modern 4-lane highway through Thorn Hill into Frankfort.

Mills made two cuts through solid limestone, totalling 400,000 cubic yards of rock that weighed 2,800 pounds to the cubic yard. One cut was 104 feet deep, the other 135. They finished the job in 10 months—and with plenty of proof that Gulf makes things run better.

"When you're working rock rather than dirt, equipment usually wears out about 40% faster," says W. A. Ferguson, Job Superintendent on the project. "Some contractors try to beat this by using a special lubricant for each machine.

"But with Gulf lubricants we found that this wasn't necessary at all. With the help of Gulf Lubrication Engineers, we greatly reduced the number of lubricants required on the job—and we saw no signs of premature wear. Our equipment included a Northwest 2½-yard shovel, five 15-ton Euclid trucks, a D-8 Caterpillar, a Gyro-Flow Ingersoll Rand compressor and three Gardner-Denver rock drills. All of our lubrication was done

lubricants and fuels . . .

RUN BETTER!

with Gulf oils and greases.

"We used Gulf diesel fuel in all equipment, and throughout the job only two injectors failed—an excellent record, considering how hard we pushed the machines. We are perfectly satisfied with the performance of the Gulf lubricants and fuel we used."

Expedite *your* jobs with Gulf fuels and lubricants. See how Gulf makes things run better. For complete information, just call the nearest Gulf office, or mail coupon for "Gulf Contractors' Guide"—the maintenance "bible" for heavy equipment.

GULF

GULF OIL CORPORATION
Dept. DM, Gulf Bldg., Pittsburgh 30, Pa.

Please send "Gulf Contractors' Guide."

Name_____

Title_____

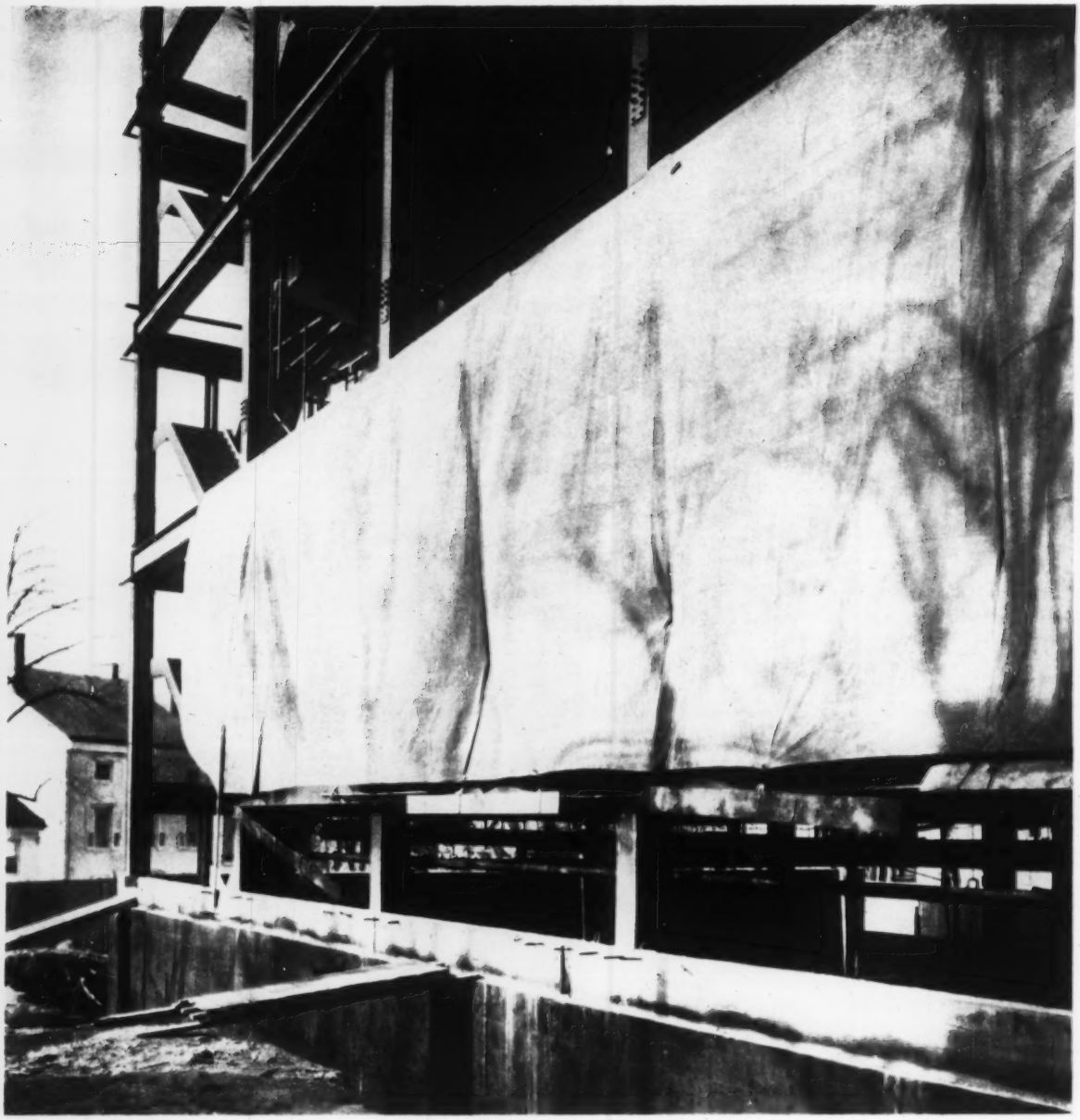
Company_____

Street_____

City_____ Zone___ State_____

SP 9649

GO-9-0185



SEVEN-STORY COLONIAL—This seven-story building, shown during construction, is the new Bucks County Court House and Office Building in Doylestown, Pennsylvania. For its exterior—which is a replica of Williamsburg Colonial architecture—special face bricks with pink granite trim and bronze window frames are being utilized. The building itself is constructed of steel and is equipped with a special window washing gondola that runs on a trolley supported by a six-foot overhang of the roof. To protect freshly poured concrete from freezing, Wark & Co., builders, used these large, weather-resistant tarps manufactured by the Webb Manufacturing Co., Philadelphia, Pa. and made from Mount Vernon Duck.

This is another example of how fabrics made by Mount Vernon Mills, Inc. and the industries they serve, are serving America. Mount Vernon engineers and its laboratory facilities are available to help you in the development of any new fabric or in the application of those already available.

UNIFORMITY Makes The Big Difference In Industrial Fabrics

Mount Vernon Mills, inc.

A LEADER IN INDUSTRIAL TEXTILES

TURNER HALSEY COMPANY
Selling Agents

Main Office and Foreign Division: 40 Worth Street, New York, N. Y.
Branch Offices: Chicago • Atlanta • Baltimore • Boston • Los Angeles

High-Speed Aerial Ladders Operate by Hand or Motor

A line of aerial ladders is offered for the Service-Master service body or other suitable vehicles.

The ladders can be raised, extended and rotated to overhead working positions in seconds, the manufacturer states.

Two models in 26-ft and 30-ft sizes are available. The ML is elevated by a hydraulic cylinder powered by a manually powered pump. The LH has an electric motor driven pump. Both models have hand-operated mechanical extension and rotation.

Ladders rotate full-circle in either direction and in a vertical arc from below horizontal to nearly vertical. SERVICE-MASTER AERIAL LADDER, McCABE-POWERS BODY CO., 5900 N. BROADWAY, ST. LOUIS 15, MO.

Two Transmission Types Offered for Wheel Loader

Two types of transmission are now available with a single model front-end wheel loader. The Model TL-14 Tractoloader comes with either the Allison transmission or the new economical Tractomatic power reversing transmission.

The Tractomatic is designed for maximum efficiency in all operatons. The manufacturer recommends the Allison for operation involving relatively long-travel haul distances.

The four-speed Tractomatic features a single hydraulically operated steering column lever that controls both forward and reverse without clutching, shifting gears or stopping.

Speed ranges up to 22.3 mph in forward and 29.3 in reverse. ALLIS-CHALMERS MFG. CO., DEERFIELD, ILL.

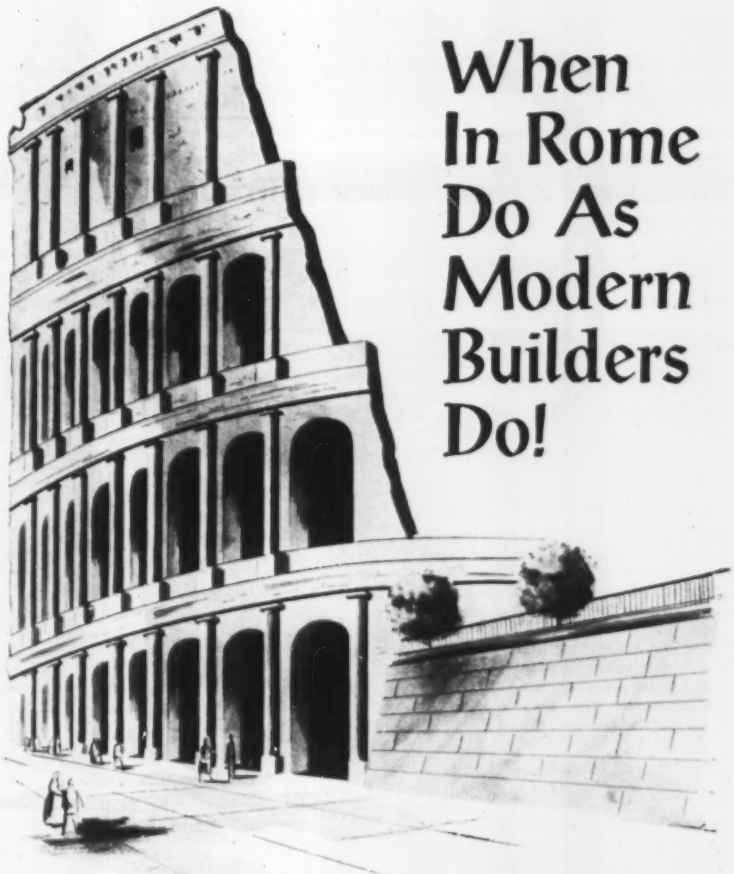
Multicolor Paint Produces Wallpaper-like Finish

Finishes similar to leather, marble, granite and cork can be obtained with Plextone, a multicolored paint.

The various textures are achieved by a chemical process that encloses each color particle in its own transparent capsule, giving the effect of liquid polka dots. A can of white mixed with a can of red, for example, results in red and white rather than pink.

Non-toxic and practically odorless, Plextone dries faster than ordinary paints, the manufacturer says. One application is reported to be equal to five coats of ordinary paint.

Cost of the paint is about 25 cents per sq ft. PLEXTONE CORP., NEWARK, N. J.

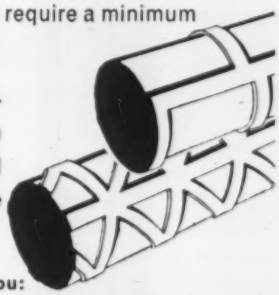


When In Rome Do As Modern Builders Do!

Imagine duplicating this building today using Roman construction methods. There was no concrete; no steel.

But today's architects and engineers, whether in Rome, Italy—Rome, Georgia—or Rome, New York, would find the job easy. Buildings of concrete reinforced with steel are economical, are erected fast, and require a minimum of maintenance.

For up-to-the-minute service in detailing, accurate fabrication, and on schedule delivery, Connors is geared for the Reinforcing Bar needs of the modern builder.



Two plants to serve you:
CONNORS WORKS / P. O. Box 2562 / Birmingham, Ala.
WEST VIRGINIA WORKS / P. O. Box 118 / Huntington, W. Va.

CONNORS STEEL PORTER **DIVISION**

H.K. PORTER COMPANY, INC.

PORTER SERVES INDUSTRY: with Rubber and Friction Products—THERMOID DIVISION; Electrical Equipment—DELTA-STAR ELECTRIC DIVISION, NATIONAL ELECTRIC DIVISION, PEERLESS ELECTRIC DIVISION; Specialty Alloys—RIVERSIDE-ALLOY METAL DIVISION; Refractories—REFRACTORIES DIVISION; Electric Furnace Steel—CONNORS STEEL DIVISION, VULCAN-KIDD STEEL DIVISION; Fabricated Products—DISSTON DIVISION, FORGE AND FITTINGS DIVISION, LESCHEN WIRE ROPE DIVISION, MOULDINGS DIVISION, H. K. PORTER COMPANY de MEXICO, S.A., and in Canada, Refractories, "Disston" Tools, "Federal" Wire and Cable, "Nepcoduct" systems—H. K. PORTER COMPANY (CANADA) LTD.

It takes a good combination

Men with ingenuity and skill . . .
the best equipment . . . to perform
the task of building for America.

Wherever engineered construction is required . . .

HARBERT

CONSTRUCTION CORPORATION
Birmingham Alabama

BRIDGES • AIRFIELDS • HIGHWAYS • PIPELINES • WATER SYSTEMS • RAILROADS • DAMS
COMMERCIAL AND INDUSTRIAL INSTALLATIONS

Men and Jobs

J. W. Vickrey Appointed State Highway Engineer

J. W. Vickrey is California's new state highway engineer. He succeeds George T. McCoy, who retires after 16 years in that position.

Mr. Vickrey joined the highway department in 1917 and has been deputy state highway engineer since 1955. For the past 12 years he has been the chief planner of the California freeway program.

Mr. Vickrey had previously worked with the Southern Pacific Railroad and the Los Angeles County Survey's office.

Mr. McCoy joined the State Highway Division in 1927 as state highway engineer. He has directed the spending of $2½ billion for state highway improvement and has been one of the leaders in the development of California's highway system.

Careers

Business

R. Felix Jones has been appointed construction manager of Thorncliffe Park Ltd., Toronto residential-industrial-commercial development. He had been an engineer with the Foundation Co. of Canada, Ltd.

Frederick A. Freiberg has joined F. Ray Martin Engineers, Inc., St. Louis. He was formerly structural project engineer for Sargent & Lundy, Chicago consulting engineers.

D. A. Bessmer is the newly elected president of Timken Roller Bearing Co., Canton, Ohio. He succeeds **William E. Umstatt** who is now director and chairman of the executive committee. Mr. Bessmer has been serving as executive vice president.

William R. Dersnah has been appointed production superintendent of the new $25-million plant built by Dundee Cement Co., Dundee, Mich. For the past two years he was chief chemist on the Gresik Cement Project in Indonesia, where he taught natives to run a newly constructed cement plant.

Gerald J. Haney, Jr. is assistant to the chief engineer of the Elgin, Joliet and Eastern Railway Co., Joliet, Ill. He succeeds **Don R. Wilson,** who resigned.

Arthur C. Andrews and **Erwin R. Bretscher** have opened a consulting engineer office in Terrace Park, Ohio. Mr. Andrews was formerly associate engineer with Harry Balke, engineers, Cincinnati, and Mr. Bretscher was with Hazelet and Erdal, consulting engineers, Cincinnati.

T. Conrad Judd is vice president, legal counsel and credit manager at Industrial Asphalt, Los Angeles, producers of asphalt paving materials. He had been assistant United States attorney in southern California.

Steven Galezewski heads a new engineering consultant group, Rockwin Engineers, established by Rockwin Prestressed Concrete Corp., Santa Fe Springs, Calif. The group specializes in the design, fabrication and erection of prestressed concrete structures.

C. I. Orr has been appointed district engineer for United States Steel's American Bridge Division, New York City. He succeeds **G. P. Willoughby,** who has been transferred to the Birmingham district.

Arnold W. Eckhoff, Jr. is a partner in Rader Associates, Miami, Fla. engineers and architects. Since 1954 he has been with Weed, Johnson Associates, Miami.

Clifford Holforty has opened consulting engineer offices in Rochester, Mich. He has been chief structural engineer with Linn Smith Assoc., Inc., Rochester, and has also worked with Victor Gruen Associates, Los Angeles architects.

Associations

Henry T. Toennies is the assistant director of engineering for the National Concrete Masonry Association. He has served as materials engineer for the Illinois Division of Highways and the U. S. Corps of Engineers. More recently he has worked with A. M. Kinney, Inc., consulting engineers, as assistant laboratory chief. In his new position, Mr. Toennies will supervise the Association's new research laboratory in Washington, D. C.

(*Men and Jobs continued p. 64*)

BEN H. PETTY

Renowned Educator, Engineer & Author

YOU BE THE JUDGE

Let's take a look at some recent Portland Cement Association advertisements placing a halo on concrete pavements.

Exhibit A—"Concrete gives sizeable year-after-year savings on upkeep."
The Facts—In 1954, a Congressional Subcommittee for Special Investigations, after extensive testimony from qualified authorities with wide paving experience, reached this conclusion: *"One factor in this problem which we must not overlook is that the evidence we have from all sources indicate that maintenance costs are, in fact, about equal for both asphalt and concrete."*

Exhibit B—"Concrete will save $72,200 per mile over 35 years."
The Facts—In 1957, Mr. C. D. Curtiss (then Commissioner, U. S. Bureau of Public Roads) stated: "In general, **it may be said that under comparable service conditions, and with comparable designs, the annual costs of the two types (asphalt and concrete) are reasonably close. We do not have available conclusive evidence that would justify taking any other position than this on a question which has long been of interest and concern to engineers."**

Exhibit C—"Concrete is nonflexible—it has *beam* strength it never loses."
The Facts—How come—in view of those transverse cracks spaced three to ten feet apart, that appear within a few years, on most concrete pavements? *Short* beams—don't you think?

Exhibit D—"Concrete highways 35 years old are a matter of record."
The Facts—And what a record! Did you ever see or experience a smooth riding surface on a 35-year-old concrete, heavily traveled state highway? Serviceability does not continue with age of concrete pavements.

Exhibit E—"Today's modern concrete promises 50 years and more of smooth going for drivers."
The Facts—Future proof will be much more believable than current promises. Reminds us of the Pullman porter who, when asked by a detraining passenger, "What is an *average* tip?" said, "One dollar—but very few passengers ever come up to the average."

THINK IT OVER

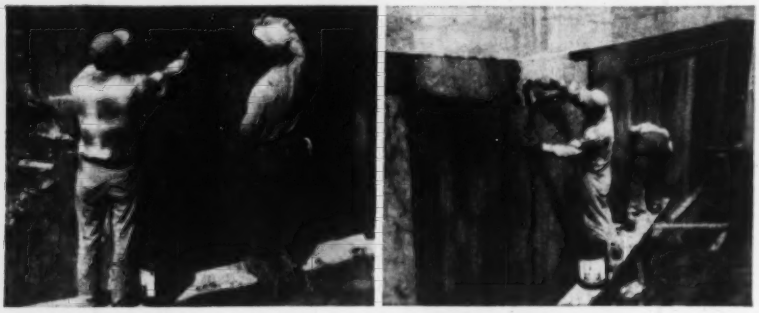
Ben H. Petty

Presented in the Public Interest by

THE ASPHALT INSTITUTE

*PM permanently and positively waterproofs sub-grade vertical walls... average cost is only 10 cents per square foot installed

NOTE: Depending on existing conditions, sub-grade walls may be waterproofed with "PM" for as little as 8 cents or as much as 12 cents per square foot installed.



*Premoulded Membrane TRADEMARK the industry's only TRUE vapor seal

For years the construction industry has used various methods in an attempt to waterproof sub-grade vertical walls. None have offered the true solution to this problem. Some methods, while initially effective, soon crack and spall . . . others may actually dissipate . . . some are immediately violated during backfilling and most all require the added cost of a protection course. "PM" offers the true answer to the problem of permanently and positively waterproofing subgrade vertical walls. "PM" is completely waterproof and vapor impermeable. "PM" will not tear or rupture during installation or backfilling . . . may be installed without special equipment. Available in standard 4'x8'x1/8" sheets or in special sizes to meet job requirements. Manufactured in strict quality control standards to offer a top quality, continuously stable waterproofing material.

SEALTIGHT®

PRODUCTS

- "CORKTITE" Perimeter Insulation
- "SEALTIGHT" PVC Waterstops
- "HYDROMAT" Asphalt Liners
- Expansion Joints — Asphalt, Fibre, Cork and Sponge Rubber
- Joint Sealing Compounds
- Roof Coatings and Cements
- Sewer Joint Compounds

"PM" PROVIDES AN INVIOLATE SHIELD THAT ISOLATES THE STRUCTURE FROM THE SITE

The installation of "PM" blocks every entrance through which causal water seepage and moisture could enter the structure. "PM" is used as an impaction sheet between the footing and pier wall, on the exterior of the sub-grade vertical wall and under the floor slab. PM5X adhesive is used to secure "PM" to the vertical wall and to seal the butt joints and overlay strips. "PM" under the slab is laid in a "Dutch-lap" method and the overlaps are sealed with Sealtight Catalytic Bonding Asphalt to provide a completely monolithic vapor seal.

WRITE FOR COMPLETE INFORMATION

W. R. MEADOWS, INC.

16 KIMBALL ST. • ELGIN, ILLINOIS

. . . Men and Jobs

H. Dorn Stewart has been re-elected for a second term as president of the Producers' Council. He is affiliated with the Barrett Division of the Allied Chemical Corp.

Richard Lewis, former director of sales for Robert E. Nesmith, Inc. has been appointed executive secretary of the Houston Chapter of the Associated General Contractors.

John J. Mulrooney has been elected executive vice-president of the National American Wholesale Lumber Association. He is president of the H. M. Bickford Co., New York City lumber firm.

Israel W. Santry, Jr., professor of civil engineering at Southern Methodist University, has been elected president of the Texas section of the American Society of Civil Engineers.

Raymond C. Kelly has been named executive secretary of the California Consulting Engineers Association.

Harold Julian is the new president of the Wyoming Associated Contractors.

James B. Cash has been appointed Secretary-Manager of the Associated General Contractors of Delaware, Inc. A graduate of the U. S. Naval Academy, Mr. Cash has served with the Rural Electrification Administration and Cities Service subsidiaries. In 1947 he was named head of the utilities and fuel division of the headquarters staff for the occupation forces in Tokyo. In 1953 he became advisor for construction transportation and utilities for the Far East Command.

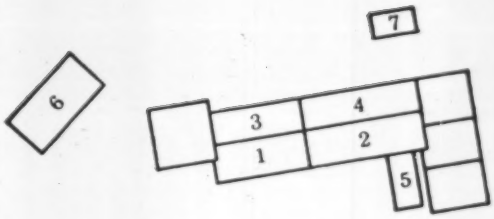
Honors

Theodore Musho has won a prize fellowship for a year's study at the American Academy in Rome. He graduated from the University of Cincinnati in 1958 with a degree in architecture. For the past year Mr. Musho worked for his master of architecture degree under a Whitney fellowship.

Ronald V. Giles has been awarded a National Science Foundation award to study hydraulic engineering at the University of Delft, the Netherlands. Professor Giles teaches civil engineering at Drexel Institute of Technology and has been a faculty member for 25 years.

Amedeo Leone and **Minoru Yamasaki** are dual recipients of gold medals awarded by the Detroit Chapter of the American Institute of Architects. Mr. Leone is president of the Detroit architectural and engineering firm of Smith, Hinchman & Grylls Associates Inc. He has been active in city planning, riverfront development and the regional planning of metropolitan Detroit.

Mr. Yamasaki is a member of the architectural firm of Leinweber, Yamasaki & Hellmuth.



The Wheaton Plaza Regional Shopping Center, Wheaton, Maryland
Arthur L. Anderson, Architect. Lathrop Douglass, Consulting Architect
J. Gibson Wilson, Jr., and Beall & LeMay, Consulting Engineers

7 out of 11 constructed with USS AmBridge Steel Joists

Convincing examples of the trend towards steel joist construction are the new shopping centers springing up throughout the country. For example, 985 tons of USS AmBridge Steel Joists were used in 7 of the 11 buildings in the vast Wheaton Plaza Regional Shopping Center now being completed at Wheaton, Maryland.

USS AmBridge Steel Joists provide rigid, economical and light-weight construction suitable for most types of roofs, ceilings and floors. Their ease and speed of erection cuts installation time, helps get the structure under cover sooner, and makes schedules easier to meet. And when steel joists have been erected and properly bridged, they immediately form a safe working platform for other trades.

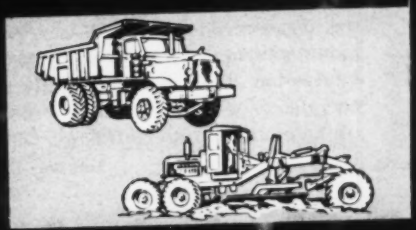
When you specify USS AmBridge Steel Joists you are sure of getting the finest open-web steel joists available anywhere. AmBridge Joists are quality controlled through every step of the manufacturing process—from furnaces through fabrication. They are consistently uniform and completely reliable. For detailed information, contact our nearest Contracting Office.

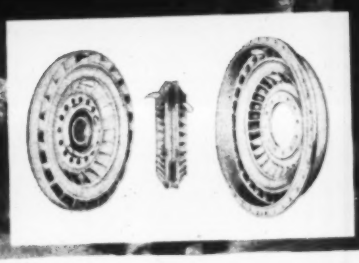
USS is a registered trademark

American Bridge Division of United States Steel

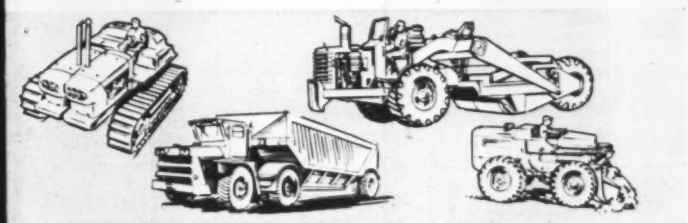
General Offices: 525 William Penn Place, Pittsburgh, Pa.
Contracting Offices in: Ambridge • Atlanta • Baltimore • Birmingham • Boston
Chicago • Cincinnati • Cleveland • Dallas • Denver • Detroit • Elmira • Gary
Harrisburg, Pa. • Houston • Los Angeles • Memphis • Minneapolis • New York
Orange, Texas • Philadelphia • Pittsburgh • Portland, Ore. • Roanoke • St. Louis
San Francisco • Trenton • United States Steel Export Company, New York

What's it costing





you to keep the clutch pedal?



THE ACTUAL FIGURES are on your own cost sheets: Engine-disconnect clutch replacements at $800 or more each year (plus expensive downtime)—too-frequent overhauls of overtaxed engines at $1,200 to $1,500 each—constant repair bills for shock-load-damaged axles and drive lines —$1,500 to $2,000 in equipment damage every time you train a rookie driver.

What Can You Do About These Costs?

Now mark this: When your equipment has Allison TORQMATIC DRIVES, you eliminate these costs—or cut them to amazing new lows. Engine-disconnect clutch repairs are ended, so is shock-load damage. New drivers practically never make a costly shifting mistake. You save one engine overhaul out of three.

So you're money ahead no matter how good your present clutch-pedal equipment is—or how skillful the men who operate it. For TORQMATIC takes over the clutching job—adjusts power output to every change in load demand—protects your whole power train every working minute.

Can You Afford to Pay the Penalty?

Can you afford, then, to pay the penalty of owning old-fashioned clutch-pedal equipment—especially when it means competing against other owners who looked past first cost and are now enjoying TORQMATIC savings?

Remember, no other heavy-duty hydraulic transmission has been so thoroughly battle-tested over the years. And you can get it in over 100 makes of equipment of most every type. See your equipment dealer—or write Allison for the full story.

ALLISON DIVISION OF GENERAL MOTORS
Indianapolis 6, Indiana
In Canada: General Motors Diesel Ltd., London, Ontario

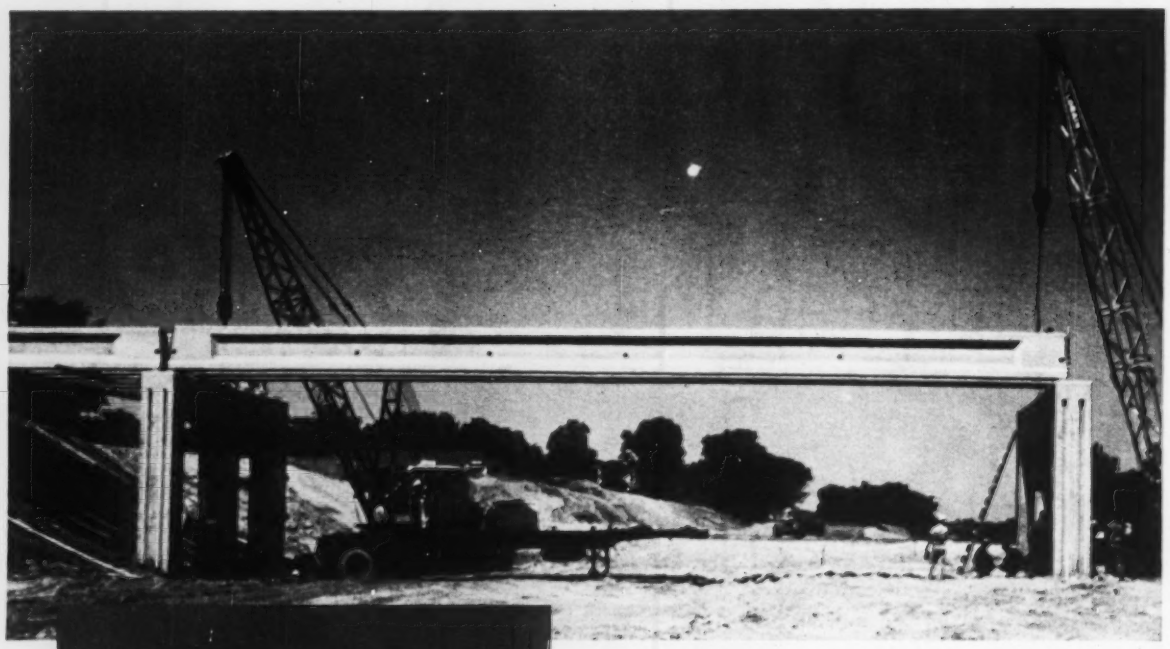
Allison TORQMATIC

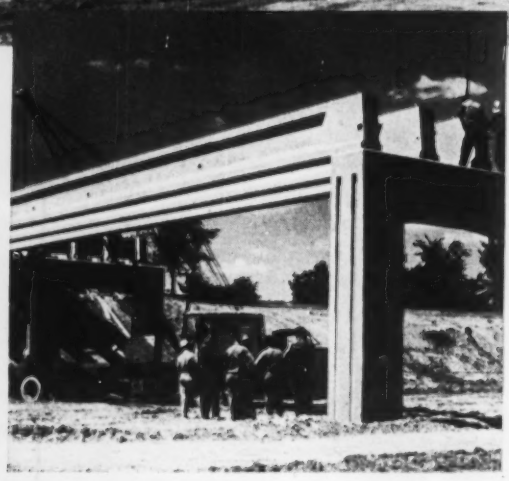
TORQMATIC® DRIVES

THE MODERN DRIVE FOR MODERN EQUIPMENT

Built stronger to last longer—Allison casts its converter for extra strength, greater precision —and the converter is *integrated* with the transmission for a neat, easily serviced installation.

PRESTRESSED CONCRETE BEAMS
for Minnesota Highway Bridge at Fort Snelling





Two cranes place prestressed concrete beams for this new bridge on State Route No. 5, Fort Snelling, Minnesota. Fourteen 78' 8" and fourteen 34' 3" beams were used. The larger units weighed 24 tons each.

OWNER: Minnesota Highway Department

CONSULTING ENGINEERS: Mayeron Engineering Company, Minneapolis, Minn.

GENERAL CONTRACTOR: Ashbach Construction Company, St. Paul, Minn.

CONTRACTOR FOR CONSTRUCTION OF BRIDGE: Sheehy Construction Company, St. Paul, Minn.

MANUFACTURER OF PRESTRESSED BEAMS: Prestressed Concrete, Inc., Roseville, Minn.

In Minnesota, as in every other section of the country, more and more highway bridges are being built with prestressed concrete beams. Low first cost, quick delivery, ease and speed of erection and minimum maintenance costs are the reasons for the increasing number of bridges of prestressed design.

Beams for this Minnesota Highway Bridge on State Route No. 5 at Fort Snelling were manufactured by Prestressed Concrete Inc., Roseville, Minn. Using Lehigh Early Strength Cement and steam curing, the concrete in these beams reached 5,000 PSI in 12 hours. As a result, the manufacturer gained maximum production efficiency and economy through early removal of units and quick reuse of casting beds.

This is typical of the advantages of prestressed concrete and Lehigh Early Strength Cement in modern concrete construction.

LEHIGH CEMENTS

LEHIGH PORTLAND CEMENT COMPANY, ALLENTOWN, PA.

Obituaries

Frederick H. Paulson Dies; Noted Structural Engineer

Frederick H. Paulson, 61, partner in the engineering firm of Charles A. Maguire Associates, Providence, is dead. Mr. Paulson joined the firm in 1940 as chief structural engineer and in 1953 was named a partner. At the time of his death he was supervising construction in Providence of the nation's first automated post office (ENR Feb. 12, p. 27).

A 1920 graduate of Brown University, Mr. Paulson's first job was structural engineer with F. P. Sheldon & Sons, Providence. In 1935 he joined Oresto DiSaia, Providence architect and five years later entered the Maguire organization.

Mr. Paulson was also director of the American Society of Civil Engineers from 1954 to 1957.

Clifford L. Meanor, 66, president of the Clay Flue Lining Institute. Mr. Meanor helped found the institute and had been associated with it since 1954. Before that, he was with the Natco Corp. Pittsburgh for 50 years.

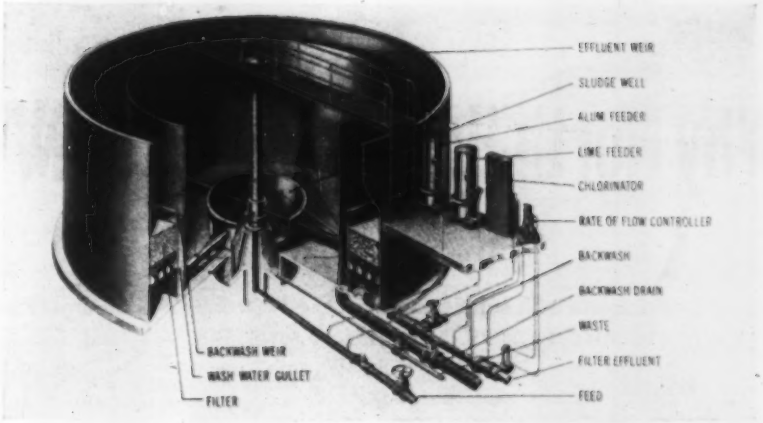
Aubrey C. Leonard, 59, chief of the secondary road branch of the bureau of public roads. He joined the bureau in 1947 after serving nineteen years as county engineer of Olmstead County, Minn.

Lawrence J. Stich, 66, Louisville builder-contractor.

John R. Jurgensen, 53, president of the John R. Jurgensen Co., Cincinnati road contractors. He was also president of the Valley Asphalt Corp. Mr. Jurgensen is a graduate of the University of Cincinnati. He began his career working on a railroad construction in Costa Rico.

Bernard B. Murphy, 55, retired engineer for the U. S. Corps of Engineers. Before his retirement last year, he was chief engineer in the mechanical design branch.

Paul Kelly, 65, retired partner in Kelly & Gruzen, New York City consulting engineers and architects. For the past two years he had been water extension engineer for Yonkers, New York. During World War II, Mr. Kelly was chief engineer of the New York District of Corps of Engineers and was responsible for the building of camps for outbound troops. He had also been associated with extensive highway and bridge construction in the Dominican Republic.



NEW DEVELOPMENT IN "UNITIZED" WATER TREATMENT

Dorrco PeriFilter Systems now available with manual, semi-automatic, or full-automatic controls

The field-proven Dorrco PeriFilter System permits installation of pre-treatment unit and filter in a single tank. With this unitized approach, construction costs are cut up to 40% compared with conventional installations.

Now, with a choice of manual, semi-automatic, or full-automatic controls, a standard PeriFilter System can be selected to provide maximum economy consistent with good engineering practice. Manually operated units are available with capacities up to 2 MGD and semi-automatic units up to 6 MGD. Either a Dorrco Hydro-Treator or a Dorrco Clariflocculator can be incorporated in the PeriFilter so that high rate or conventional pre-treatment can be utilized. For more information, write to Dorr-Oliver Incorporated, Stamford, Conn.

Hydro-Treator, PeriFilter, Clariflocculator T. M. Reg. U. S. Pat. Off.

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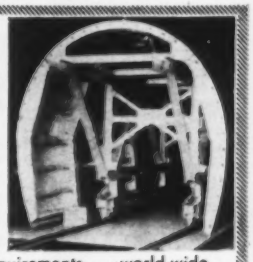

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Why North Hagerstown's new "TV High School"

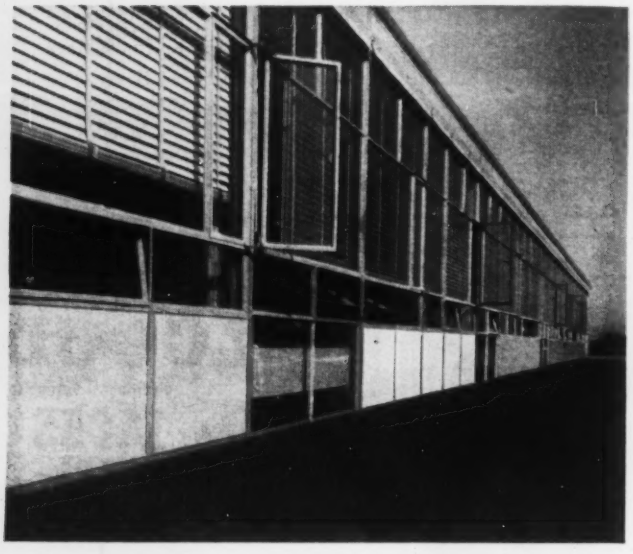
Complete with supplementary closed-circuit TV educational system, North Hagerstown, Maryland's new "TV High School" embodies the latest educational and design concepts. Like McLeod & Ferrara, architects, you'll find that the use of Truscon VISION-VENT® Window Walls is an ideal way to convert one such concept — that of exterior walls which provide added light, beauty, and economy — into a striking reality.

MORE LIGHT, BETTER VENTILATION —Use of VISION-VENT Window Walls assures higher natural light factor, good fire-resistance and insulating value, better ventilation. When required, panels can be provided with louvers for heating or ventilation systems.

PLEASING LINES, COLORS—Select practically any type of window—double-hung, architectural projected, intermediate projected, and many others. Trim, modern appearance. Choice of high-gloss panel colors for single- or multi-colored effects. Almost any desired arrangement of insulated panels; fixed or operating lights; side-hinged, inward or outward projecting ventilators. Choose either steel or aluminum.

IMMEDIATE AND LONG-TERM ECONOMY—Applied-skin type construction gives up to 5% more usable floor space, reduces weight on frame and foundation, permits fast erection even in foul weather.

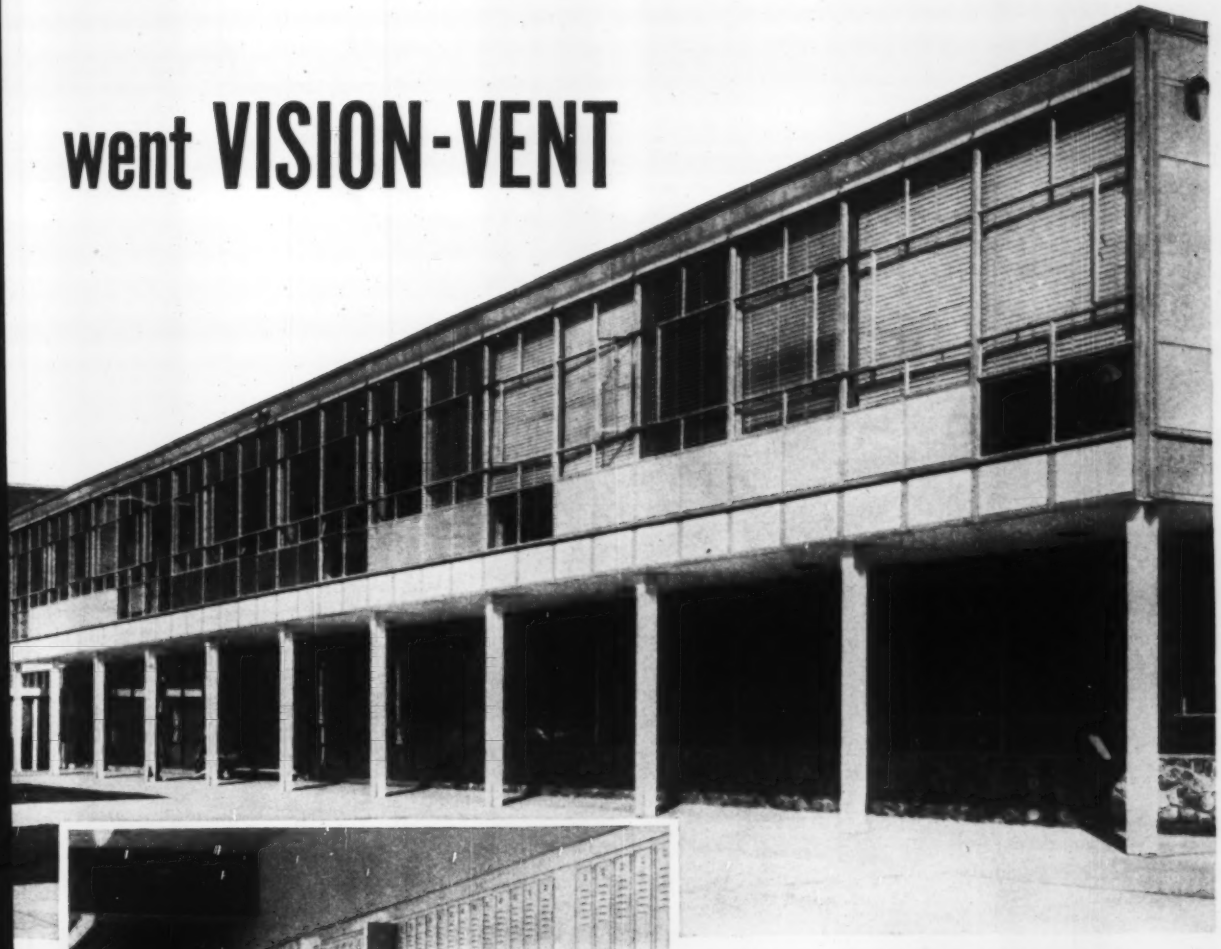
For *all* the advantages of modern curtain wall construction—combined with the *exclusive* feature of ventilated, insulated panels integrated with heavy-intermediate steel windows —investigate VISION-VENT. Send coupon for full information without obligation.



Cost of VISION-VENT Window Wall construction utilized by McLeod & Ferrara, Architects, compared favorably with any other type of construction considered. No other type, however, offered the combination of added light, beauty, durability, and complete flexibility of design.

Truscon "O-T" Open Truss Steel Joists® are employed exclusively in North Hagerstown's new high school. Joists are covered by acoustical ceilings in all but a few laboratories —such as the electronics lab seen above—where possible increases or changes in electrical systems will require complete accessibility. Send coupon for "O-T" Steel Joist details.

went VISION-VENT



Architects: McLeod & Ferrara, Washington, D.C.

These high-quality *Republic Steel Lockers* will be enjoyed by generations of North Hagerstown high school students. Designed and built by Republic's Berger Division to weather youthful exuberance. Bonderized to take and keep a finer enameled finish. New, improved handle. All locker sizes and styles. Complete planning, engineering, and installation service. Send coupon for complete information.

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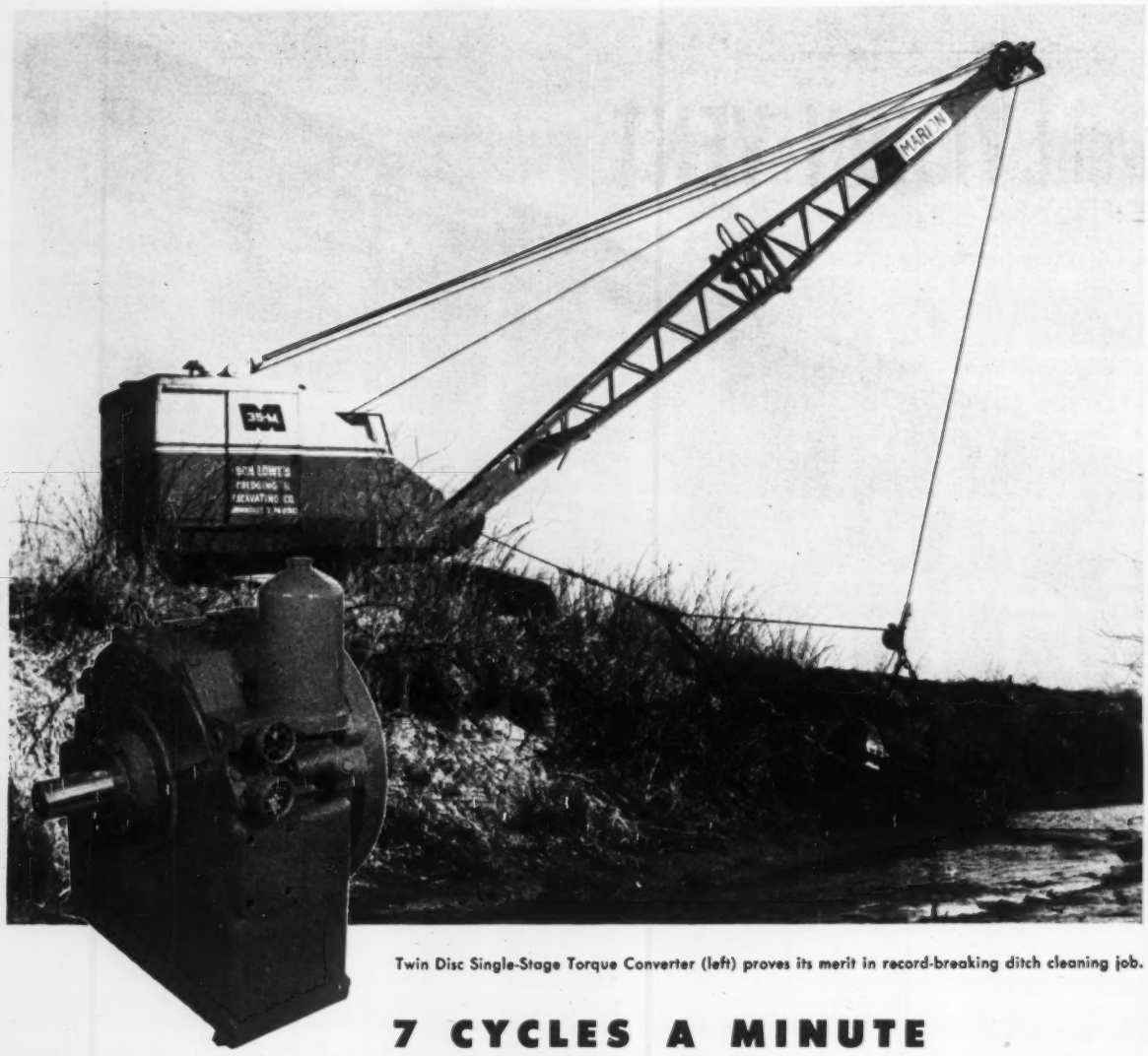
☐ VISION-VENT Window Walls
☐ Republic Steel Lockers
☐ "O-T" Steel Joists

Name_____ Title_____

Company_____

Address_____

City_____ Zone____ State_____



Twin Disc Single-Stage Torque Converter (left) proves its merit in record-breaking ditch cleaning job.

7 CYCLES A MINUTE
for torque converter-equipped Marion 35-M Dragline

Canton, Ohio truck farmers recently hired Don Lowe's Dredging & Excavating Co., Loudonville, Ohio, to clean out their drainage ditches. Loose dirt had filtered into the ditches, gradually closing them up and severely reducing their effectiveness.

Almost 10,000 feet of ditches 10 to 12 feet wide needed cleaning, and three feet of muck had to be removed from the bottom of the cuts.

The entire job was done with one machine—a newly purchased Marion Type 35-M Dragline with a one yard bucket. Powered by a Cummins J6B1 Engine, this unit drives through a Twin Disc Single-Stage Torque Converter. With a 45° swing the dragline completed seven cycles per minute—*less than nine seconds per load!*

Let Owner-Operator Don Lowe tell why he likes to work with torque converter drive: "The converter really smooths out the cycles. I get exactly the torque I need for digging, hoisting or swinging, and the engine never lugs down. It's a lot faster, and a lot easier to handle too."

Marion and almost every other excavating equipment manufacturer offers the Twin Disc Torque Converter as standard or optional drive. When you specify a Twin Disc Converter in your crane or shovel, you get the same converter that boosts production and profits in your crawler tractor. It's the best investment you can make when buying heavy-duty machinery. Twin Disc Clutch Company, Racine, Wisconsin; Hydraulic Division, Rockford, Illinois.

TWIN DISC

TWIN DISC

Torque Converters

Bidding Tight for Pennsylvania Sewers

Competition was keen between the three low bidders for this King of Prussia sanitary sewerage system contract, in the suburban area of Philadelphia. The low bidder edged out his nearest competitor by a fraction of a per cent, and the third low bidder by less than 2%.

Work is for the Upper Merion Township Sewerage Authority. Glace & Glace, Inc., Harrisburg, is the consultant.

A total of 109,396 lin ft of standard and extra strength sewer pipe will be laid at depths up to 12 ft. An additional 6,903 lin ft of extra strength sewer pipe will be laid at depths over 12 ft, and 135 lin ft in a railroad right of way. Pipe sizes are 8 to 36 in.

Contract includes manholes, headwalls, force mains, connections, rock excavation, highway tunneling, resurfacing, and related work.

Prevailing wages in Philadelphia include: tractor operators, including bulldozers, $3.765; power crane & shovel operators, $4.315; truck drivers, $2.725; common laborers, $2.50.

1C Ernest Renda Constr. Co., Bound Brook, N. J.	$1,272,672
2 E. Leva & Son, Philadelphia	1,278,152
11 C. & T. Affiliates, Collingswood, N. J.	1,899,165

Bids: 9-1-59 Items	Unit	Quantity	Unit Prices 1C	 2
Sewer pipe, complete in place				
std str, 8", depth 0-6'	lf	1,865	$3.50	$3.25
6-8'	lf	50,455	3.50	3.50
10-12'	lf	15,293	4.00	4.00
ext str, 8", depth 10-12'	lf	4,071	4.50	4.80
over 12'	lf	1,265	7.00	5.50
std str w SJ, 8", depth 0-6'	lf	672	4.00	3.75
6-8'	lf	4,050	4.00	4.00
8-10'	lf	4,515	4.00	4.40
ext str w SJ, 8", depth				
10-12'	lf	1,167	4.50	5.50
over 12'	lf	100	12.00	7.00
std str, 10", depth 0-6'	lf	40	5.00	4.00
6-8'	lf	40	5.00	4.25
8-10'	lf	40	8.00	4.75
ext str, 10", depth 10-12'	lf	80	9.00	6.00
over 12'	lf	107	10.00	8.00
std str w SJ, 10", depth				
0-6'	lf	100	5.00	4.30
6-8'	lf	2,789	5.00	4.55
8-10'	lf	725	5.00	5.00
ext str w SJ, 10", depth				
10-12'	lf	110	6.00	7.00
over 12'	lf	55	15.00	8.00
std str, 12", depth 0-6'	lf	100	5.50	4.50
6-8'	lf	205	5.50	4.75
8-10'	lf	340	5.50	5.25
ext str, 12", depth 10-12'	lf	375	6.75	7.25
over 12'	lf	745	10.50	9.00
std str w SJ, 12", depth 0-6'	lf	273	5.50	5.25
6-8'	lf	980	5.50	5.50
8-10'	lf	260	6.50	6.25
ext str w SJ, 12", depth				
10-12'	lf	115	7.50	8.00
over 12'	lf	100	14.00	10.00
std str, 15", depth 0-6'	lf	100	6.00	5.90
6-8'	lf	125	6.00	6.40
8-10'	lf	708	7.00	6.90
ext str, 15", depth 10-12'	lf	100	8.00	10.00
over 12'	lf	100	13.00	13.00
std str w SJ, 15", depth 0-6'	lf	1,052	6.50	7.00
6-8'	lf	2,017	6.50	7.50
8-10'	lf	980	8.00	8.00
ext str w SJ, 15", depth				
10-12'	lf	935	8.00	11.00
over 12'	lf	585	13.00	11.00
std str w SJ, 18", depth 0-6'	lf	30	8.00	6.00
6-8'	lf	45	8.00	7.00
8-10'	lf	1,580	8.00	8.00
ext str w SJ, 18", depth				
10-12'	lf	1,510	10.00	10.00
over 12'	lf	228	15.00	15.00

Bids: 9-1-59 Items	Unit	Quantity	Unit Prices 1C	 2
std str w SJ, 24", depth 0-6'	lf	50	$11.00	$8.00
6-8'	lf	1,540	11.00	9.00
8-10'	lf	3,932	11.00	11.00
ext str w SJ, 24", depth				
10-12'	lf	2,892	12.00	12.00
over 12'	lf	3,353	12.00	14.00
std str w SJ, 36", depth 0-6'	lf	100	18.00	16.00
6-8'	lf	345	19.00	18.00
8-10'	lf	1,705	19.00	18.00
ext str w SJ, 36", depth				
10-12'	lf	990	20.00	21.00
over 12'	lf	265	25.00	30.00
in RR r way	lf	135	28.00	31.00
Y branches, complete, 8x6"	ea	1,268	7.00	6.00
10x6"	ea	5	10.00	9.00
12x6"	ea	5	20.00	11.00
15x6"	ea	39	20.00	15.00
VC hse conn, 6" std str, hor, any depth	lf	18,508	3.50	2.25
vertical	vf	120	10.00	8.00
Manhole stubs, 6" dia	ea	10	5.00	10.00
8" dia	ea	1	20.00	15.00
15" dia	ea	1	25.00	25.00
24" dia	ea	1	30.00	50.00
36" dia	ea	1	40.00	75.00
CI sleeve in manhole, 8"	ea	2	20.00	25.00
15"	ea	1	30.00	50.00
21"	ea	1	40.00	100.00
Conn to existing manhole	ea	21	15.00	50.00
line	ea	1	100.00	50.00
Manhole, type A	vf	3,977	24.00	25.00
type B	vf	97	30.00	25.00
Manhole frame & cover	ea	490	40.00	33.00
Drop connection, type I	vf	50	20.00	11.00
type II	vf	55	25.00	15.00
type III	vf	16	30.00	10.00
Lamphole	vf	155	12.00	10.00
frame & cover	ea	22	25.00	19.00
Sidewalk replacement	sy	46	5.00	10.00
Curb replacement	lf	210	4.00	4.00
Resurface other than state hwys	sy	27,657	1.70	1.50
state highways	sy	3,740	5.00	8.00
Concrete resurfacing	sy	5	20.00	15.00
Mass concrete	cy	349	25.00	25.00
Crushed stone	cy	1,192	6.00	6.00
Rock excavation	cy	29,162	7.50	7.50
Force main, cl 150 A.C. 4"	lf	910	4.00	3.75
6"	lf	3,565	4.00	4.00
10"	lf	7,185	5.50	5.50
14"	lf	1,052	8.00	8.00
Highway tunneling, 8"	lf	170	60.00	80.00
10"	lf	200	60.00	110.00
15"	lf	155	80.00	90.00
18"	lf	130	100.00	95.00
Headwall, type A	ea	2	200.00	300.00
type B	ea	1	100.00	350.00
type C	ea	1	100.00	400.00
Shoring left in place	Mbf	10	350.00	150.00
Saddle connection, 6"	ea	10	10.00	25.00
CI overflow, 6"	lf	155	6.00	6.00
pipe, 10"	lf	80	10.00	12.00
14"	lf	65	12.00	16.00

Texas Channel Dredged At 17.63 Cents Per Cu Yd

To eliminate several long bends in the Bastrop Bayou, Tex., and to improve navigation conditions, Burnell Dredging Co., Port Isabel, Tex., will dredge 595,000 cu yd of material from the bayou to create a new channel 3.7 miles long. The award at $104,899, by the Brazos River Harbor Navigation District, Freeport, Tex., is 11.8% below the engineer's estimate. It averages 17.63 cents a cu yd. W. A. Randle, of the Navigation District, is the engineer.

Bottom cut of the channel, 7 ft below mean low tide, will be 80 ft wide, with side slopes 1½-ft horizontal to 1-ft vertical.

Work began July 16 and is scheduled for completion in 180 days.

1C Burnell Dredging Co., Port Isabel, Tex.	$104,899
2 Brown & Root, Houston, Tex.	117,513
5 Baver Dredging Co., Inc., Port Lavaca, Tex.	171,836
EE W. A. Randle, Navigation District, Freeport, Tex.	119,000

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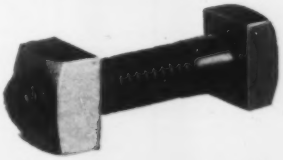
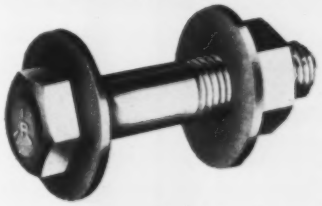


construction



schedules

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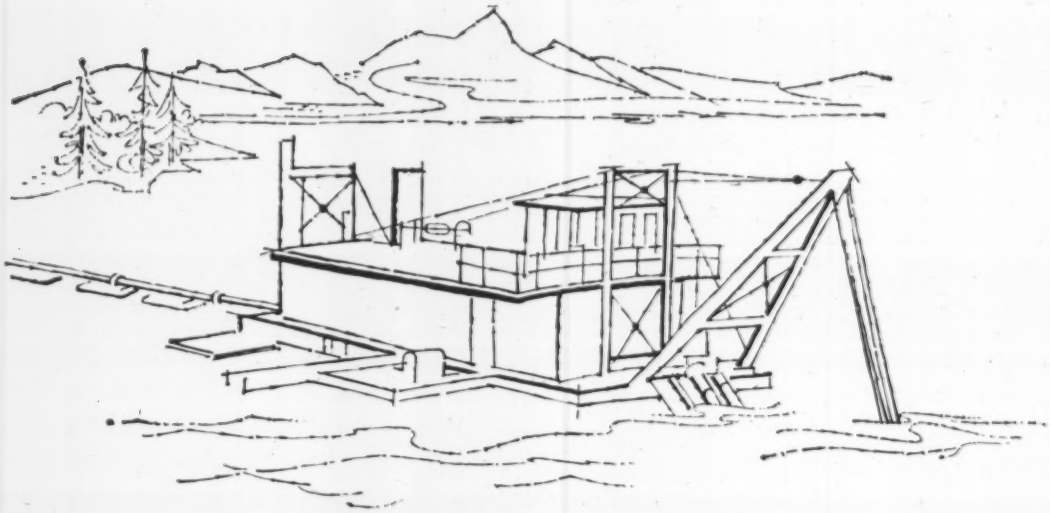
What makes dredging profitable?



The key to profitable dredging is the prospective owner's selection of the right dredge for his project. How can a purchaser, then, be assured that he is making a sound investment in dredging equipment and not taking a gamble? After all, dredges are purchased to make, or to save, money.

First the buyer should have expert advice to help him determine what type and size of dredge is best suited to the job at hand. Then he has a right to know the exact cost of the dredge, what it will do and what it will cost to operate. He should be completely certain that he is buying a machine that will be competitive, not only when new, but after many years of faithful service.

To get these assurances, he should expect the dredge to have been designed and built under a single engineering and manufacturing responsibility that will guarantee quality and performance.

When considering these factors, he should ask himself, "What sort of an organization is back of a dredge to see that I am getting one of the best value?" Ellicott answers that by the performance record of their dredges designed by experts who have taken and will continue to assume complete responsibility for dredge design, manufacture, and operation.

Nothing can replace that specialized experience, now approaching the 75 year mark. The purchaser of an Ellicott dredge will know *in advance* what his investment will be.

When you are planning a dredging job, take advantage of this experience. Talk *first* to Ellicott and get equipment recommendations based on *your* job requirements. It will mean the difference between profitable dredging and the other kind.

ELLICOTT MACHINE CORPORATION

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Subsidiaries: Dragues Ellicott France, Paris, France; Ellicott de Mexico, Mexico City, Mex.; Dragas Ellicott do Brasil Ltda., Rio de Janeiro, Brazil; Ellicott Fabricators, Inc., Baltimore, Md.; McConway & Torley Corp., Pittsburgh, Pa.

Successors to the floating dredge business of the Bucyrus-Erie Co. and the American Steel Dredge Co. Complete engineering sales and repair parts service.

3019

Materials and Labor Prices

Monthly Market Quotations by ENR Field Reporters

IRON AND STEEL PRODUCTS — PER 100 LBS. BASE MILL PRICES

	STRUCT SHAPES—	PLATE CARBON STEEL	REINF BARS* billet	RIVETS ½-in. structural	SHEET PILING Base	STEEL RAILS Per Net Ton Standard	STEEL RAILS Per Net Ton Light	TRACK SUPPLIES Angle Bars	TRACK SUPPLIES Std Spikes	TRACK SUPPLIES Tie Plates	TRACK SUPPLIES Track Bolts
Birmingham Area	$5.50	$5.30	$5.675	$12.25	.....	$110.50	$130.00	$6.975	$9.75	$6.60	.....
Chicago Area	5.50	5.30	5.675	12.25	$6.50	110.50	130.00	6.975	9.75	6.60	.....
Pittsburgh Area	5.50	5.30	5.675	12.25	6.50	110.50	130.00	6.975	9.75	6.60	$14.75
Buffalo Area	5.50	5.30	5.675	12.25	6.50	110.50	130.00	6.975	9.75	6.60	14.75
Cleveland	.....	.....	5.675	12.25	6.50	.....	.....	.....	.....	.....	14.75
Youngstown Area	.....	.....	5.675	.....	.....	.....	.....	.....	9.75	.....	.....
Geneva	5.50	5.30	.....	.....	.....	.....	.....	.....	.....	.....	.....
Los Angeles	6.20	.....	6.375	.....	6.50	.....	.....	.....	9.75	6.875	.....
Pueblo	.....	.....	.....	.....	.....	.....	.....	99.75	9.75	6.60	.....

* Fairless Works, $5.575.

IRON AND STEEL PRODUCTS — F.O.B. WAREHOUSE, PER 100 LBS., BASE PRICE

	STRUCTURAL SHAPES— Per 100 lb. base price	STRUCTURAL SHAPES— Extras, New York:	REINFORCING BARS— Per 100 lb., base price 5 tons to carload lot New billet	REINFORCING BARS— Rail steel	REINFORCING BARS— Extras, New York:	EXPANDED METAL LATH Per 100 sq. yd., carload lots Std. diamond mesh. 3.4 lb.	EXPANDED METAL LATH Std. ribbed 3.4 lb.	WELDED FABRIC REINFORCING Per 100 sq ft., carload lots fob mill	
Atlanta	$9.40		8.75	$8.75		$53.00S	$57.00S		
Baltimore	9.70		9.00T	.....		44.50	49.00		
Birmingham	9.00ty		8.99ty	8.99ty		61.00p K	67.00p K		
Boston	9.12 K		8.75t	8.75t		49.50 K	54.00 K		
Chicago	9.15a		7.16gu	7.16gu		52.00‡U	63.00‡U		
Cincinnati	9.56akt		9.04‡	.....		44.50 Kg	49.00mn Kg		
Cleveland	8.20at		7.14ct	.....		48.50 KL	51.00 KL		
Dallas	10.45M		9.00	9.00		44.00w	48.50w		
Denver	10.15c K		9.25c	.....		63.00a	69.00a		
Detroit	9.25RM		7.15Q	11.85Q		58.00O	63.00O		
Kansas City	9.82sT		8.10N	.....		49.00	60.00		
Los Angeles	8.90dkt		7.35frt	.....		55.00S	64.00S		
Minneapolis	.....		9.26T	9.26T		44.50 K	49.00 K		
Montreal	7.90–8.80xCF/8.20–8.90AtF		7.00/7.50PGt	7.00/7.50PGt		65.70h	70.20h		
New Orleans	.....		8.00gkta	.....		48.50 K	53.50 K		
New York	9.84‡s		8.60ty	8.60ty		52.00n	59.00ns		
Philadelphia	9.10buR		8.23u	.....		44.50‡U	55.20‡U		
Pittsburgh	9.00y		7.35y	.....		58.50‡rw	64.50‡rw		
St. Louis	9.45stz		7.75‡zQ	7.75‡zQ		61.00wz K	62.00wz K		
San Francisco	9.90aS		9.85sS	.....		52.00S	56.00S		
Seattle	10.20aD		8.85DM	.....		67.00‡wD	73.75‡wDR		
Toronto	9.20H		7.85	7.85		48.10qqI	55.10qqJ		

EXTRAS, per cwt—Quantity (applies to LCL shipments only): under 1,000#, +$1.50; 1000–1999#, +$1.30; 2000–4999#, +$1.20; 5000–9999#, +90¢; 10,000–19,999#, +90¢; 20,000–29,999#, +80¢; 30,000–39,999#, +10¢; 40,000# & up, none. ‡Size: #2 #9, #10, #11 +60¢. #4 +$1.00; #5 +70¢; #6, #7 +$1.40; #8 +$2.20 (except in New York City and surrounding metropolitan area where bending must be done on the job). ◆Engineering (details and placing from designs by others): over 500 tons, +45¢; 200–499 tons, +50¢ but not over $4500; 75–199 tons, +65¢ but not over $2000; 20–74 tons, +75¢ but not over $975; 5–19 tons, +85¢ but not over $300; under 5 tons, +$1.00 but not over $65. Min. charge $25. Design only: +60¢.

Quantity extras, per cwt: under 100#, +$10; 100–399#, +$7; 400–999#, +4.00; 1000–1999#, +1.25; 2000–4999#, base price; 5000–9999#, −25¢; 10,000–19,999#, −50¢; 20,000–29,999#, −75¢; 30,000# and up, −1.25

*‡ Delivered *" Aver. of Canadian & American *# add 4% sales tax *a 2000–4999# *b 10,000–19,999# fob city *c 20 tons or over *d 10,000–29,999# *e Intermediate struct'l *f Incl. delivery in free zone *g CL *h list price; dominion tax exempt; add provincial and municipal taxes *i add provincial and municipal sales taxes *j intermediate and hard grade *k fob city *l delivered; contractor to do unloading *m copper alloy *n LCL *o asphalt coated *p 500 sq. yd. or more. *q 2.5 lb *r less 2% disc. for cash *s 2,000–4,999# *t less ½% disc. 10 days *u add 10¢ switch *v incl 15¢ del. *w truck lots. *x add 2% sales tax *y add 15¢ del. *z add 10¢ del. *A American made. *C Canadian made. *D 1½% for cash. *E 30,000# or over. *F Federal tax exempt for bldgs. *G add 10¢ del. *H 8.85 without tariff charges. *I 3 lb $80.00. *J 4 lb $47.50. *K less 2% disc. 10 days *L F.o.b. Youngstown plant *M 5,000–9,999# *N 2,000–19,999# *O 100 sy lots *Q 5 tons to CL *R: revised *S less 2% disc. 10th *T less ½% disc, 10th of mo. *U less 2% disc 10 days

PLUMBING, HEATING, WATER, SEWER AND DRAIN PIPE

	C. I. PIPE PRICE INDEXa	ASBESTOS CEMENT PIPE Z per lin. ft. 6" Press Cl. 150	ASBESTOS CEMENT PIPE Z per lin. ft. 12" Sew Cl. 1500	CLAY SEWER PIPE Per ft., delivered, car load ASTMC 13-55 8 in.	CLAY SEWER PIPE Per ft., delivered, car load ASTMC 13-55 12 in.	CLAY SEWER PIPE Per ft., delivered, car load ASTMC 200-55T 24 in.	CLAY SEWER PIPE Per ft., delivered, car load ASTMC 200-55T 36 in.	CLAY DRAIN TILE† Per 1,000 ft., car load lots, f.o.b. ASTMC 4-55 6 in.	CLAY DRAIN TILE† Per 1,000 ft., car load lots, f.o.b. ASTMC 4-55 8 in.	CONCRETE SEWER PIPEb Per ft., delivered ASTMC 14-55 12 in.	CONCRETE SEWER PIPEb Per ft., delivered ASTMC 14-55 24 in.
Atlanta	130.5	$1.61/1.69	$2.36/2.48	$0.55r	$1.05r	$4.05r	$12.50r	$209.00rr	$334.00r	$0.92m Kr	$3.68m Kr
Baltimore	140.1	1.61/1.69	2.19/2.30	.665	1.20	5.05	12.71	187.80	289.20	1.01	2.75
Birmingham	125.8	1.61/1.69	2.26/2.37	.50r	.95r	4.14rw	13.50rw	295.00rz	430.00rzR	1.25rS	2.75rS
Boston	143.1	1.63/1.71	2.19/2.30	.784qrtL	1.512qrtL	6.255qrtM	.....	215.40r	330.60r	1.56S	3.47S
Chicago	140.9	1.61/1.69	2.19/2.30	93rm	1.78rm	7.52rm	21.16rm	220.00Br	330.00Br	1.30	4.00
Cincinnati	135.5	1.63/1.71	2.19/2.30	.616rt	1.188rt	4.725rt	12.40r	270.00r	400.00r	.85rAB	3.25rAB
Cleveland	141.7	1.63/1.71	2.19/2.30	.69BCN	1.32tBC	5.13tBC	13.33tBC	155.40mBC	240.60mBC	1.35	3.60P
Dallas	137.8	1.63/1.71	2.26/2.37	.550‡B	.961B	4.408‡B	9.752‡BB	.....	.....	1.25BD	2.85BD
Denver	148.2	1.71/1.80	2.36/2.48	.56nrR	1.00nrR	3.93nr	.....	460.00nr	610.00nrR	1.05m	3.50m
Detroit	142.1	1.61/1.71	2.19/2.30	.97nkX	1.86nkX	7.48nkX	19.95nkX	172.00mkX	286.00mkX	1.40kX	5.23kX
Kansas City	138.5	1.61/1.71	2.26/2.37	.61r	1.105r	6.104Br	16.50r	303.00r	581.00r	1.60r	3.55r
Los Angeles	148.6	1.70/1.79	2.19/2.30	.82bl	1.78blS	7.19blS	16.90blS	410.00lS	590.00lS	1.24vE	3.66vE
Minneapolis	149.9	1.67/1.75	2.26/2.37	.96eB	1.73eBR	7.50eBR	.....	.....	.....	2.19DFH	6.31DFH
Montreal	.....	.....	.....	1.13u	2.00u	7.00u	13.50u	288.00	545.00	1.17D	3.11tpD
New Orleans	133.3	1.61/1.69	2.26/2.37	.566r	1.12r	5.65r	.....	240.50pr	490.00	1.41tR	3.76tR
New York	138.5	1.63/1.71	2.19/2.30	.85	1.63R	10.73	28.80	240.81	369.81	1.50‡B	3.60‡B
Philadelphia	137.8	1.61/1.69	2.19/2.30	.721	1.401	9.021x	24.681x	220.00‡	330.00‡	1.50‡A	4.00‡A
Pittsburgh	142.9	1.63/1.71	2.19/2.30	.94KR	2.01KR	8.79K	24.15K	190.00	295.00	1.66Db	3.93DB
St. Louis	136.9	1.61/1.69	2.26/2.37	.62r	1.15r	4.92r	12.68rS	200.00r	300.00r	1.50t	3.65
San Francisco	148.6	1.70/1.79	2.19/2.30	.861d	1.861d	7.531d	18.00‡d	360.00‡l	620.00‡l	1.05‡Q	3.39‡Q
Seattle	149.0	1.71/1.80	2.19/2.30	.85bk	1.83bb	7.61k	.....	254.00ckY	.....	1.95ky	4.55ky
Toronto	.....	.....	.....	.80F	1.50F	6.00F	.....	157.00F	280.00F	1.05F	4.62F

*WROUGHT STEEL PIPE (Full standard weight) Discount from list: see footnote

Mill	3½ to 6 in., Lap Weld* Black %	3½ to 6 in., Lap Weld* Galv. %	2½ & 3 in., Butt Weld* Black %	2½ & 3 in., Butt Weld* Galv. %	Mill	*WROUGHT STEEL PIPE (Full standard weight) Discount from list: see footnote
Lorain, Ohio	.....	+18.75/+11.00a	13.75	+2.50/+3.50	Benwood, W. Va.	13.75	+3.50	12.75	+3.50	14.50a	13.75	+2.50	12.75	+2.50	Sharon, Pa.	13.75	+2.50	11.75	+2.50	14.50a	13.75	+2.50	11.75	+2.50	b Continuous
Aliquippa, Pa.	.....	+11.00a	13.75	+3.50/+1.00	Youngstown, O.	.....	+15.50a	13.75	+3.50/+1.00	15.50a	13.75	+3.50/+1.00	13.75	+3.50/+1.00	Wheatland, Pa.	13.75	+3.50/+1.00	.....	.....	15.50a	13.75	+3.50/+1.00	13.75	+3.50/+1.00	c Seamless
Sparrows Pt., Md.	.....	.....	17.25	+1.00	Indiana Harbor, Ind.	.....	.....	17.25	+1.00	.....	17.25	+1.00	17.25	+1.00	Elma, Pa.	13.75	+3.50/+1.00	.....	.....	15.50a	13.75	+3.50/+1.00	13.75	+3.50/+1.00	
Benwood, W. Va.	13.75	+3.50	13.75	+2.50	Sharon, Pa.	13.75	+2.50	13.75	+2.50	14.50a	13.75	+2.50	13.75	+2.50	Fontana, Calif.	0.75	+15.50b	0.75	+15.50b	15.50a	0.75	+15.50b	0.75	+15.50b	
Youngstown, O.	12.75	+3.50	12.75	+3.50	Wheatland, Pa.	.....	.....	.....	.....	.....	.....	.....	.....	.....											
Indiana Harbor, Ind.	11.75	+4.50	11.75	+4.50	Elma, Pa.	13.75	+3.50/+1.00	13.75	+3.50/+1.00	15.50a	13.75	+3.50/+1.00	13.75	+3.50/+1.00											
Sharon, Pa.	13.75	+2.50	13.75	+2.50	Fontana, Calif.	0.75	+15.50b	0.75	+15.50b	15.50a	0.75	+15.50b	0.75	+15.50b											
Wheatland, Pa.	.....	.....	.....	.....																					
Elma, Pa.	13.75	+3.50/+1.00	13.75	+3.50/+1.00																					
Fontana, Calif.	0.75	+15.50b	0.75	+15.50b																					

*‡ Delivered *# add 4% sales tax *a PRICE INDEXES for CENTRIFUGAL CAST IRON PIPE (Include carload freight allowed to city). These also serve as the HISTORICAL RECORD of THE $ PER NET TON PRICE of CLASS B, B&S, PIT CAST IRON PIPE. F.O.B. Foundry Price Indexes Birmingham, Ala., 125.8; Burlington, N. J., 134.6. For explanation of index see ENR Sept. 29, 1955 page 139. *b Extra strength. *c 4-in., $130. *d SS361-A. *f 21 in. *g culvert pipe; reinf., ASTM C 75-58. *h reinf., ASTM C 75-54. *i reinf., ASTM C 76–55. *j centrispun. *k less 2% disc. for cash. *l fob plant. *m truck del. *n LCL del., fob truck. *p less 5% disc. 10th. *p freight allowed to destination in city. *u 35,000# minimum. *r less 2% disc. 10 days. *s 1 ft lengths. *u CSA A 60. *v standard strength. *w SS; add 20% for d.s. *x fob city. *y Reinforced. *z Upper value in range based on both truck lots and less than truck lots, fob city; lower value truck lots delivered. *A single strength. *B truckload. *C less 2% disc. 15th. *D ASTM 76-57. *E less 1% disc. 10 days. *F less 2% disc. 30 days. *G LCL. *H CL. *I fob origin, freight allowed. *J reinf. B14-15. *K Less 2% disc. 15 days. *L ASTM 13-57. *M ASTM 200-57. *N 2 ft lengths. Truckiots. *O add 2% Sales Tax. *P 18 in. *Q less 1% disc. 10th. *R Revised. *S ASTMC 72, 12" 1.55, 24" 4.00. *X Revised effective 7/1/59 *Y October price revised to 250

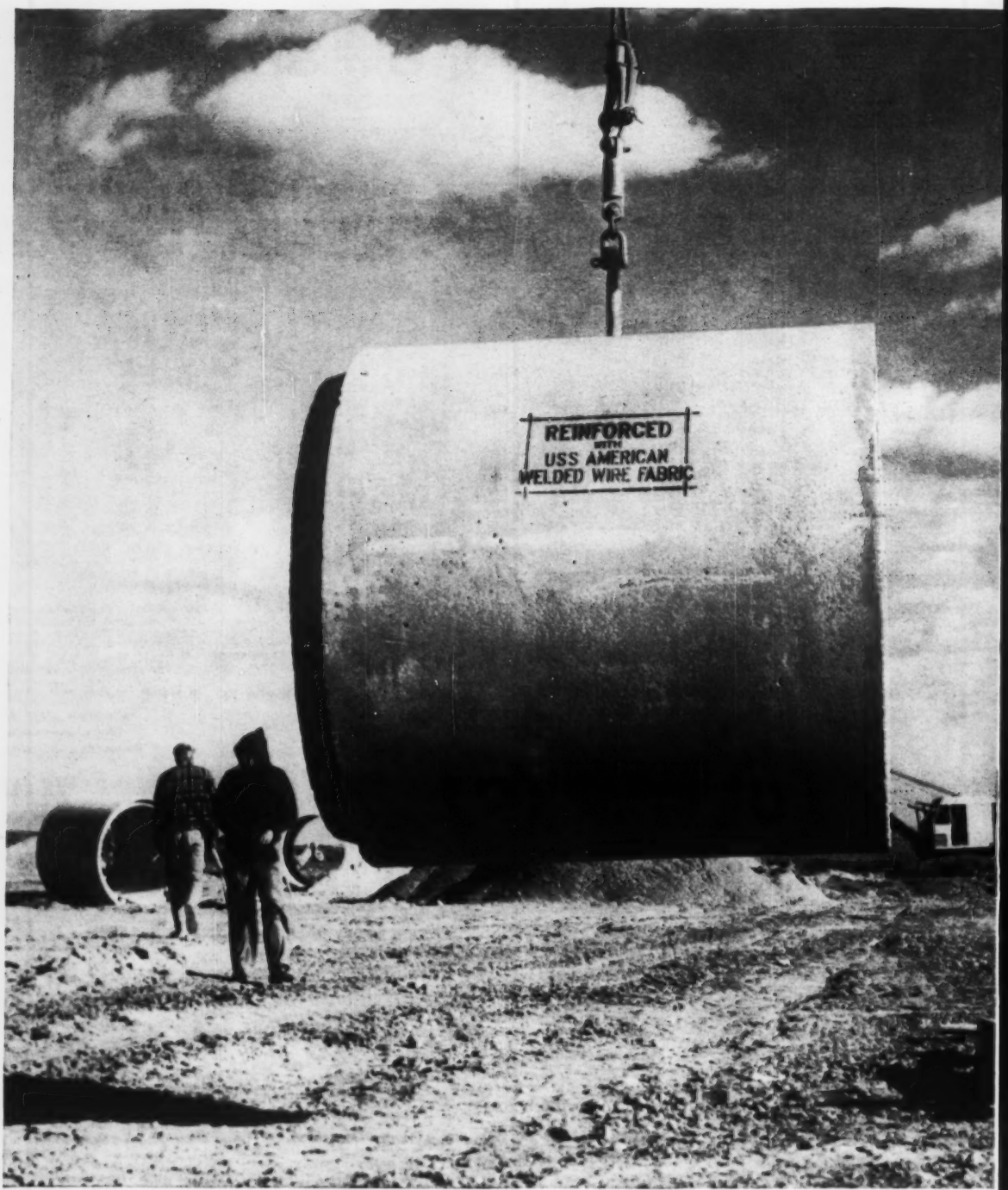
* WROUGHT STEEL PIPE: Deduct discounts shown above from the following standard list consumers carload prices to get mill price. List prices per ft.(based on approx. $200 per net ton): Butt Weld ⅛ in., 31½¢; ¼ in., 6¢; ⅜ in., 6¢; ½ in., 8½¢; ¾ in., 11½¢; 1 in., 17¢; 1¼ in., 23¢; 1½ in., 27½¢; 2 in., 37¢; 2½ in., 58½¢; 3 in., 78½¢. Lap Weld 3½ in., 92¢; 4 in., $1.09; 5 in., $1.48; 6 in., $1.92. continuous weld same as lap weld prices. Add freight, 3% transcont tax for destination price. † Production discontinued November 1957

WROUGHT IRON PIPE: List prices per ft. same as for wrought steelpipe, but add following "discounts" to get Pittsburgh mill price: Butt Weld—1 in. black, + 86.54, galv., + 95.77; 1¼ in. black, + 65.54, galv. + 95.23, 1½ in. black, + 81.79 galv. + 91.22; Lap Weld —2½ in. to 3 in. black + 67.95 galv. + 95.77; 4½ in. to 6 in. black + 84.74 galv. + 90.88 Add freight rates plus 3% transportation tax to get destination price.

See following ENR issues for OTHER PRICES:

- Wood Products, Glass, Explosives, Chemicals: Last, Oct. 22; Next, Nov. 19
- Clay Products, Lime, Plaster, Paint, Roofing: Last, Oct. 29; Next, Nov. 26
- Wage Rates, Building Board, Lath, Insulation: Last, Oct. 29; Next, Dec. 3
- Cement, Aggregate, Ready-Mixed Concrete, Asphalt: Last, Nov. 5; Next, Dec. 10

Reinforced Concrete Pipe Chosen For



This 96" diameter reinforced concrete pipe easily met the rigid requirements of ASTM Specification C76-57T. Tests indicated this reinforced concrete pipe was capable of loads exceeding 100,000 pounds, demonstrating the strength and durability.

S. J. Groves and Sons Company, Minneapolis, Minnesota—General Contractor
Abbott Contractors, Chicago, Illinois—Sub-Contractors
Waukesha Cement Tile Company, Milwaukee, Wisconsin—Pipe Supplier
American Vitrified Products Company, Milwaukee, Wisconsin—Pipe Suppliers
Lock-Joint Pipe Company, South Beloit, Illinois—Pipe Suppliers

Richard I. Bong Air Force Base Runway Drainage

More than 48,000 linear feet of concrete pipe was included in the Corps of Engineers specifications for the Richard I. Bong Air Force Base at Kansasville, Wisconsin. Many sizes were required, the largest being 96″ inside diameter. All reinforced concrete pipe was manufactured and pre-tested to meet the rigid requirements of ASTM Specification C76-57T. The 96″ pipe was required to meet a loading test of 96,000 pounds. It met this requirement easily and could have withstood loads exceeding 100,000 pounds!

Reinforced concrete pipe is designed in conformance with specifications comprehending the laws of mechanics plus the results of thousands of tests; it is manufactured by men experienced with concrete product production; and it is pre-tested to demonstrate its strength. The pre-testing is done by means of the 3-edge bearing test which is the most severe loading to which the pipe will ever be subjected!

Reinforced concrete pipe installations, in service for many years, are testimony to the strength, durability and watertightness of concrete pipe reinforced with Welded Wire Fabric.

Concrete pipe manufacturers insist on top-quality reinforcing, meeting rigid specifications—that's why so many of them use American Welded Wire Fabric. This quality product, with its machine-made accuracy, assures the proper distribution of steel. It is prefabricated from cold-drawn, 60,000 psi yield strength wires. All intersections are electrically welded to assure mechanical anchorage in the concrete. Wire diameters as large as 0.505″ on 2″, 3″ or 4″ centers can be furnished. Its rigid specifications assure superior reinforcement.

Write American Steel & Wire, Dept. 9335, 614 Superior Avenue, N.W., Cleveland 13, Ohio for complete technical literature. *USS and American are registered trademarks*

USS American Steel & Wire Division of United States Steel

Columbia-Geneva Steel Division, San Francisco, Pacific Coast Distributors
Tennessee Coal & Iron Division, Fairfield, Ala., Southern Distributors
United States Steel Export Company, Distributors Abroad

Sections of concrete pipe go in place more quickly and with no job interruptions. Its uniform size insures tight joints and proper alignment.

USS American Welded Wire Fabric, with its small diameter, closely spaced steel members, distributes load stresses evenly throughout the concrete pipe. It is the ideal concrete pipe reinforcement, easily formed to proper cage diameters.

USS American Welded Wire Fabric

Bids Asked—Low Bidders—Contracts Awarded—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager J. A. MAHONEY, M. WETZEL, M. E. SCIORRA, D. TARTAGLIA, MARIE MORAVSIK, ELAINE CHOMYAK, ELIZABETH WERRA, ELEANOR QUERET, Reports, J. H. WEBBER, E. R. HUBER, Statistics.

NEW ENGLAND

BUILDINGS—SLC

Conn., Wethersfield—SCHOOL, etc.—Corpus Christi Church Corp., 84 Somerset St., soon lets contract 2 story, brick, rein.-con. school and convent, Silas Deane Highway. $750,000. J. Gerald Phelan, 211 State St., Bridgeport, archt. Fletcher-Thompson, 211 State St., Bridgeport, engrs. CD 10/7.

HEAVY CONSTRUCTION—LB & CA

▲† **Franchi Constr. Co., Inc.**, 216 Webster St., West Newton, Mass., LB $2,219,187, est. $2,464,000, HF Radio (T) and Administration Facilities, U. S. Naval Radio Station (T) Cutler, Washington Co., NBy-22966, Spec. No. 22966/58, JONESPORT, ME. Dist. P. Wks. Office, 495 Summer St., Boston, Mass. Haydem Harding & Buchanan, 1340 Soldiers Field Rd., Brighton, Mass., engrs. Bids Oct. 29. CD 9/24.

▲ **Perini Corp.**, 73 Mt. Wayte Ave., Framingham, Mass., LB $8,053,456, est. $10,035,921, Everett Dam and Winslow Rd. relocation-Everett Reservoir-Contoocook and Piscataquog Rivers—Flood Control, Hookinton, Dunbarton and Weare Counties, ENG-19-016-60-1, NEW HAMPSHIRE. U. S. Eng., 424 Trapelo Rd., Waltham, Mass. Bids Oct. 29. CD 9/21.

▲† **U. S. Eng.**, 424 Trapelo Rd., Waltham, Mass., cancelled bids to have been opened Nov. 4, Air National Guard facilities, Barnes Airport, ENG-19-016-60-30, WESTFIELD, MASS. $1,500,000-$1,600,000. Brask Engineering Co., 177 State St., Boston, Mass., engr. Will re-advertise. CD 10/16.

BUILDINGS—LB & CA

▲ **John A. Volpe Constr. Co.**, 54 Eastern Ave., Malden, Mass., CA. Est. $7,500,000, HOPKINS CENTER consisting of 400 x 200 ft. area, structural 4 bldg. group incl. galleries, studios and workshops, concert hall, lecture auditorium, theater, alumni hall and snack bar, HANOVER, N. H. Trustees Dartmouth College, Hanover, N. H. Bids Oct. 14. CD 9/2.

▲ **D. Antonellis, Inc.**, 15 Sparhawk St., Brighton, Mass., CA $1,336,570, est. $1,300,000, Roxbury MEMORIAL SCHOOL, Deckard and Townsend Sts., Roxbury, BOSTON, MASS. City, Dpt. School Bldgs., 26 Norman St., Boston, Mass. Bids Oct. 14. CD 10/16, under LB.

▲ **Tornabene Bros. Co.**, 170 Needham St., Newton, Mass., LB $1,116,000, JUNIOR-SENIOR HIGH SCHOOL, St. George St., DUXBURY, MASS. Town, Supt. Schools, Duxbury, Mass. Bids Oct. 29. CD 10/6.

M. I. O'Connor, Inc., 694 Bridge St., Northampton, Mass., CA $974,000, HIGH SCHOOL addn., SOUTHWICK, MASS. Town Supt. Schools College Hy., Southwick, Mass. Bids Oct. 14. CD 10/16, under LB.

A. R. Green & Son, Inc., 19 St. James Ave., Holyoke, Mass., LB $820,500, Base Bid, NAISMITH BASKETBALL HALL OF FAME, SPRINGFIELD, MASS. Springfield College, 263 Alden St., Springfield, Mass. Munson, Mallis, Bradley, Peterson & Burgener, 6 Frost St., Springfield, Mass., archts.

▲ **Louis Beckenstein**, 95 Haynes Road, West Hartford, Conn., Owner Builds, $1,300,000, 130 HOUSES, Fort Hill Rd., GROTON, CONN.

▲ **John Zandonella, Inc.**, 70 Chase St., Bridgeport, Conn., CA $2,726,400, Jonathan Law HIGH SCHOOL, Devon, MILFORD, CONN. Town, Bd. Educ., 38 W. River St., Milford, Conn. Bids Oct. 22. Awarded Oct. 30. CD 10/29, under LB.

▲ **Otto R. Deicke & Sons**, 785 High Ridge Rd., Ridgefield, Conn., Owner Builds, $1,600,000, 64 HOUSES, "Glen Acres", Haviland Rd., RIDGEFIELD, CONN. Henrici Assocs., 17 Governor St., Ridgefield, Conn., engrs.

MIDDLE ATLANTIC

BUILDINGS—BA

▲ **N. J., Clifton**—FOOD DISTRIBUTION CENTER—BA 11/16—General Foods Corp., North St., White Plains, N. Y., design and constr. 2 story, 159,000 sq. ft. food distribution center, 31-acre tract, Erie and D. L. & W. R.R. lines and Garden State Parkway. $1,500,000. CD 10/23

▲ **N. Y., Mineola**—COUNTY EXECUTIVE OFFICE—BA 12/1—Nassau Co. Dpt. P. Wks., Old County Court House, Contr. 977-W1, general contract, Contr. 977-W2, heating, ventilating and air-conditioning, Contr. 977-W3, plumbing, Contr. 977-W4, electrical, Contr. 977-W5, elevators, 5 story Nassau County executive office, West St. Plans deposit $75 general, $50 each for mechanical trades. Eggers & Higgins, 787 United Nations Plaza, New York, N. Y., archts. CD 10/30.

▲ **Pa., Pittsburgh**—CLASSROOM—BA 12/9—General State Auth., 18 and Herr Sts., Harrisburg classroom, University of Pittsburgh, $2,000,000. Plans deposit $75. Altenhof & Brown, 1230 Park Bldg., Zone 22, archts. A. F. Jones, c/o owner, ch. engr.

BUILDINGS—SLC

▲ **D. C., Wash.**—SCHOOL—Catholic University of America, 620 Michigan Ave. N.E., soon lets contract School of Engineering and Architecture. Thomas Lo-craft & Assocs., 1518 P St. N.W., archts. CD 8/3.

HEAVY CONSTRUCTION—LB & CA

W. J. Irwin Son, Inc., Irwin Rd., Tonowanda, N. Y., CA $691,172, relocation utilities and electrical work on Whirlpool St., Niagara Falls, Niagara Co., Spec. No. PA-N-23030, Niagara Contr. No. N-24, NEW YORK. Power Authority of State of New York, The Coliseum Tower, 10 Columbus Circle, New York 19, N. Y. Bids Oct. 1. CD 10/5, under LB.

▲ **NEW YORK**—State Dpt. P. Wks., State Office Bldg., Albany,

John C. Peterson Constr. Corp., 958 Church St., Baldwin, N. Y., CA $1,148,452, b. conc. 2.1 mi., misc. work 0.06 mi. Amityville Village Broadway, Rte. 110, Proj. U-297 (5), Suffolk Co. Bids Sept. 10. CD 9/11, under LB.

▲ **PENNSYLVANIA**—State Hy. Dpt., 506 North Office Bldg., Harrisburg,

Pa.—**Kimbob Inc.**, P. O. Box 127, Harrisburg, Pa., LB $763,636, divided hy. c. conc., 3,201 ft., 1 alt superstructure bridge, ramps, intersection T. R. 22 and 230 by-pass, Lower Paxton Twp., Dauphin Co.;

Pa.—**Lycoming Constr. Co.**, 127 Susquehanna St., Williamsport, Pa., LB $1,975,771, (15 bidders), grading, drainage separated hy. 28,613 ft., 2 bridges, paving intersecting and service roads, section Keystone Shortway (Interstate) Jefferson Co. CD 10/12.

▲ **PENNSYLVANIA**—Pa. Hys. Dpt., 506 North Office Bldg., Harrisburg, Bids opened 10/29,

Pa.—**G. A. & F. C. Wagman, Inc.**, 370 E. Main St., Dallastown, Pa., LB $1,071,467, (10 bidders), 2,418 ft. divided hy. b. conc. 24 ft. wide each side concrete divisor; 3 bridges, L.R. 767 (3) section Harrisburg-By-Pass (Interstate) Harrisburg, Dauphin Co.;

Pa.—**Herbert R. Imbt, Inc.**, Box 155, State College, Pa., LB $647,669, (5 bidders), 10,054 ft. divided hy. crushed aggreg. base with bit. surf. variable in width; 1 bridge; cloverleaf T.R. 545 and University Dr., State College Boro, College Twp., Centre Co. CD 10/16.

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $53,000, other public works $88,000, industrial buildings $110,000; other buildings $400,000. Also Foreign projects of $1,000,000 and more in size of interest to American contractors.

By Regions & Classes of Construction

(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

New England	Middle West
Middle Atlantic	Mississippi to Rockies
South	Far West

PROPOSED WORK

Water Supply	Public Buildings
Sewers, Waste Disposal	Mass Housing
Bridges	Commercial Buildings
Streets & Roads	Industrial Buildings
Earthwork, Waterways	Unclassified

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.

BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.

SOON LETS CONTRACT: SLC

LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.

CD dates shown are of Construction Daily Issue in which last previous report was published.

OWNERS, ENGINEERS, ARCHITECTS, CONTRACTORS are invited to report their new jobs for listing in these reports when they meet or exceed the size minimums shown above. Address these news releases to J. A. Mahoney, REPORTS, ENGINEERING NEWS-RECORD, 330 W. 42 St., New York 36, N. Y.

Symbols and Abbreviations Include:

†	Federal Government
▲	Project of $1,000,000 or over
ENR	Engineering News-Record
CD	Construction Daily

For additional reports see **Construction Daily.**

BUILDINGS—LB & CA

John Goetz & Wm. Strother, 15 Beechwood Terrace, Matawan, N. J., Owner Builds, $650,000, 27 HOUSES, Mount Pleasant Ave., MARLBORO, N. J.

▲ **Badger Mfg. Co.**, 60 E. 42nd St., New York, N. Y., CA design and construct ISO-OCTYL ALCOHOL PLANT at refinery, PHILA., PA. Gulf Oil Co., 30th St. and Penrose Ave., Phila., Pa. CD 3/31.

▲ **Gamble & Gamble Constr. Co.**, P. O. Box 57, Bolivar, Pa., LB $1,608,561, (12 bidders), general constr. HIGH SCHOOL for Somerset Area School Dist. (Proj. 818-662), SOMERSET, PA. Pa. State Pub. School Bldg. Auth., 101 S. 25 St., Harrisburg, Pa. Bids Oct. 27. CD 9/30.

Charles E. Brohawn, 19 Poplar St., Cambridge, Md., CA $813,734, brick, steel, concrete block GERIATRICS BLDG., Eastern Shore State Hospital, CAMBRIDGE, MD. State Dpt. P. Imprvts., 301 W. Preston St., Baltimore 1, Md. Bids Oct. 13. CD 10/19, under LB.

▲ **Shetland Constr. Co., Inc.**, Box 6703, Towson 4, Md., Separate Contracts, $1,100,000, 55 brick, frame, slate roof DWELLINGS, Cowpens Rd., near TOWSON, MD.

▲ **PENNSYLVANIA**—Pa. Hy. & Bridge Auth., 506 North Office Bldg., Harrisburg, Bids opened 10/29,

Pa.—**J. H. Beers, Inc.**, R.D. 2, Bangor, Pa., LB $3,765,539, est. $6,848,000, (13 bidders), Sched. 3, combined Scheds. 1 and 2, 14,590 ft. Stroudsburg by-pass, Sched. 1, 7,346 ft. RCCP 24 ft. wide each side divisor, 2 bridges, Sched. 2, 7,244 ft. RCCP 24 ft. each side divisor, 3 bridges, Stroudsburg Boro, Stroud Twp., Monroe Co.;

Pa.—**Frank Mashuda Co., Inc., Mashuda Constr. Co. & Frank Mashuda Co.**, Evans City, Pa., LB $1,815,532, est. $1,300,000, (15 bidders), divided hy. c. conc 24 ft. wide each side earth divisor between Worthington and Kittanning (Proj. 725-1), W. Franklin and E. Franklin Twps., Armstrong Co.;

Pa.—**Latrobe Road Constr. Co.**, Latrobe, Pa., LB $2,441,349, est. $3,427,300, (11 bidders), 30,838 ft. RCCP 24 ft. wide each side meadian area, 6 bridges, Proj. 726-1 Center and White Twps., Homer City Boro, Indiana Co. CD 10/15

▲† **Federal Pacific Electric Co.**, 40 Paris St., Newark 1, N. J., CA Approx. $1,000,000, metal-clad switchgear, motor control centers, panelboards, switchboards, transformers bus duct and low-voltage draw out switchgear for Museum of History and Technology, WASH., D. C. General Services Admin., 7th and D St., S. W., Wash. D. C. McKim, Mead & White, 101 Park Ave., New York, N. Y., archts. CD 3/23/56, under Public Buildings.

▲ **Peter Kiewit Sons, Co.**, 1024 Omaha National Bank Bldg., Omaha, Neb., LB $1,937,076, (10 bidders), river crossing substructure for Theodore Roosevelt Bridge, WASH., D. C. D. C. Govt., Dpt. Highways, 499 Pa. Ave. N. W., Wash., D C Bids Oct 29 CD 10/20.

SOUTH

HEAVY CONSTRUCTION—LB & CA

▲ **FLORIDA**—State Road Dpt., Holland Bldg., Tallahassee, Bids opened Oct. 27,

Fla.—**Ewell Eng. & Contr. Co.**, Lakeland, Fla., LB $735,211 (9 bidders), 4-lane divided limerock base, Type 1 b. conc. surf. course and binder course, 4.693 mi. SR 45, Fed. Aid Proj. No. F-001-2 (44), Job No. 10060-3212, Hillsborough Co.;

Fla.—**San Marco Contr. Co.**, Box 1361, St. Augustine, Fla., LB $662,562 (7 bidders), widening existing pavement, surf. treated detour, Type 1 b. conc surf. course with binder course, 3.633 mi. SR 25 (US 27) State Proj. Job No. 86060-3501, Broward Co. CD 10/13.

The Auchter Co., P.O. Box 1193, Jacksonville, Fla., CA $757,190, sewage pumping station, Project MES 15-11, JACKSONVILLE, FLA. City, City Hall, Jacksonville, Fla. Bids Oct. 6. CD 10/20, under LB.

▲ **MISSISSIPPI**—State Hy. Dpt., Jackson,

Miss.—**M & W Constr. Co.**, Tupelo, Miss., CA $682,793, est. $793,000, grading, drainage, culverts 5.573 mi. Int. Hy. No. 20 between Newton and Chunky, Proj. I-20-2(7) 106 Contr. 1, Newton Co.;

Miss.—**T. L. James & Co., Inc.**, Ruston, La., CA $2,909,035, est. $3,130,000, incld. grading, base, bit. pavt. concrete pavt., double bit. surf. treatment 11.567 mi. Int. Hy. No. 55 between Love and Aldens, Proj. I-55-4(19)272, Contr. I&S-0904(10) A, DeSoto Co.;

Miss.—**Dennis Bros. Contractors**, 1045 High, Jackson, Miss., CA $97,741, est. $131,000, grading, drainage, culverts, box bridges 3.001 mi. Miss. Hy. No. 21 between Gholsen and Preston, Proj. S-0534(10)A, Kemper and Noxubee Counties;

Miss.—**O. J. Stanton & Co.**, Greenwood, Miss., CA $655,221, est. $847,000, grading, box bridges incld. base and double bit. surf. treat. 6.495 mi. Int. Hy. No. 59 between Purvis and Hattiesburg, Proj. I-59-1 (18)53, Contr. 1, Forrest and Lamar Counties;

Miss.—**Wright Contg. Co.**, Brookhaven Rd., Columbus, Ga., CA $1,577,881, est. $1,770,000, double bit. surf. treat. bit. pavt., concrete pavt. 5.151 mi. Int. Hy. No. 55 between Alders and Tennessee Line, Proj. I-55-4 (20) 283, Contr. 1, DeSoto Co. Bids Oct. 27. Grand total $5,922,671. CD 10/15.

BUILDINGS—LB & CA

▲ **Blake Constr. Co., Inc.**, 33 E. St. S.W., Wash., D.C., LB **$2,638,000**, (13 bidders), Base Bid, Phase 1, 150-bed HOSPITAL, Seminary Rd., ALEXANDRIA, VA. Alexandria Hospital, 709 Duke St., Alexandria, Va. Bids Oct. 26. CD 10/5.

W. A. Sherman, McLean, Va., CA **$942,615**, Base Bid and Alt., INTERMEDIATE SCHOOL NO. 8, off Lawyer's Rd., Vienna, FAIRFAX, VA. Fairfax Co. Bd. Educ., Fairfax, Va. Bids Oct. 22, awarded Oct. 27. CD 10/28, under LB.

▲ **Blake Constr. Co., Inc.**, 33 E. S.W., Wash., D. C., CA **$3,438,000**, 13 story MOTOR HOTEL, NORFOLK, VA., Golden Triangle Motor Hotel, Monticello and Brambleton Aves., Norfolk, Va. CD 10/5, under LB.

Jefferson Sugg, 209 Page St., Cary, N. C., Own Forces, **$650,000**, 50 RESIDENCES, CARY, N. C.

▲ **Messengale Realty Co.**, 283 Cascade Rd. SW, Atlanta, Ga., Day Labor **$1,300,000**, 89 RESIDENCES, ATLANTA, GA.

O'Neil-Dunham, 1478 Mecaslin St. NW., Atlanta, Ga. LB **$680,150**, DEPARTMENT STORE, ATLANTA, GA. Government Employees Exchange, c/o Manuel Morris & Robert Sixta, archts., 103 W. 47th St., Kansas City, Mo.

Braun Constr. Co., 2605 Whitaker St., Savannah, Ga., CA **$742,782**, BANK-OFFICE BLDG., SAVANNAH, GA. First Federal Savings & Loan Assn., 30 E. Bryan St., Savannah, Ga. Bids Oct. 13. CD 10/20, under LB.

▲† **Babcock & Wilcox Co.**, 161 E. 42 St., New York, N. Y., CA **$11,233,495**, boiler for 500,000 kw Colbert STEAM PLANT, near Pride, ALABAMA, Tennessee Valley Auth., New Sprankles Bldg., Knoxville, Tenn. CD 1/23.

▲ **Quinn Constr. Co.**, Box 3296, New Orleans, La., LB **$2,116,000**, 146,000 sq. ft., rein.-con. frame, brick, concrete block CONVENT, west bank of Mississippi River, Bridge City, NEW ORLEANS, LA. Convent of Good Shepherd, 2601 Bienville Ave., New Orleans, La. Frerot & Wolf, 910 Chartres St., New Orleans, La., archts. Bids Sept. 24. CD 7/21/55.

Foster & Creighton, 1st American National Bank Bldg., Nashville, Tenn., LB **$644,000**, SCIENCE BUILDING, Tennessee A & I State University, NASHVILLE, TENN. State, Purchasing Dpt., State Capitol, Nashville, Tenn. CD 2/16.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

▲ **O., Avon Lake**—BA 11/24—Village, Village Hall, Section A, sewage treatment plant; Section B, sewage pumping stations; Section C, 20,827 ft. 6- to 42-in. Westerly Interceptor Sewer; Section D, 27,022 ft. 6- to 30-in. Easterly Interceptor Line; Section E, 9,941 ft. 6- to 30-in. local sewer pipe. Plans deposit $35 for A and B combined; $35 for B, C and D combined. CD 11/10/58.

BUILDINGS—BA

▲ **O., Westlake** — SCHOOL — BA 11/17 — Bd. Educ., Dover Center Rd., school, $1,300,000. Plans deposit $50 general, $40, mechanical. Fulton, DelaMotte, Larson & Nassau, 6014 Euclid Ave., Cleveland, Zone 3, archts. CD 11/10.

Wis., Waupaca—HOME FOR AGED—BA 11/20—Bethany Home, Inc., 1 story, 50,000 sq. ft. home for aged, $700,000. A. H. Siewert, 2716 W. North Ave., Milwaukee, archt. CD 1/30/58.

O., Harrison—SCHOOLS—BA 11/28—Southwest Local School Dist., West Rd., elementary schools addns., alterations, $980,000. Plans deposit $25. Edward Rosendahl, 3123 Madison Rd., archt. CD 5/11.

HEAVY CONSTRUCTION—LB & CA

▲ **INDIANA**—State Hy. Comn., State Hy. Dpt., State House Annex, Indianapolis, Bids opened 10/27,

Ind.—**Rieth-Riley Constr. Co., Inc.**, 2500 W. Fieldhouse Ave., Goshen, Ind., LB **$253,104**, est. $297,487, (5 bidders), Bridge Contr. 4695; Marion Co.; LB **$529,076**, est. $628,854, (6 bidders), Bridge Contr. 4765, Gibson Co.; LB **$512,817**, est. $582,837, (8 bidders), Bridge Contr. 4792, Marion Co.; LB **$268,697**, est. $287,230, (1 bidder), Bridge Contr. 4807, Jackson Co.;

Ind.—**The Lathrop Co.**, 1510 Montcalm, Toledo, LB **$1,512,157**, est. $1,803,350, (12 bidders), Bridge Contr. 4803, Marion Co.; LB **$1,349,353**, est. $1,731,924, (15 bidders), Bridge Contr. 4805, Wayne Co.;

Ind.—**Arcole-Midwest Corp.**, Cumberland Higgins Park Ridge, Evanston, Ill., LB **$1,015,215**, est. $1,191,476, (6 bidders), Bridge Contr. 4769, Elkart Co.;

Ind.—**Brown Bros.**, 3245 W. St. Joseph St., Lansing, Mich., LB **$570,999**, est. $857,291, (11 bidders), Bridge Contr. 4804, Wayne Co.;

Ind.—**McKeand & Johnson, Inc.**, 9 Marriot Dr., Anderson, Ind., LB **$803,564**, est. $931,544, (3 bidders), Bridge Contr. 4806, Clark Co.;

Ind.—**Mitchell & Stark Constr. Co., Inc.**, Medora, Ind., LB **$512,384**, est. $537,959, (2 bidders), Bridge Contr. 4818, Ohio and Dearborn Counties. CD 10/12.

George D. Hardin, 2130 S. Michigan Ave., Chicago, Ill. CA **$721,568**, (1 bidder), sanitary relief sewers, incl. 29,000 ft. 10- to 66-in. rein.-con., c. i. and clay pipe, RIVERSIDE, ILL. Village, Village Hall, Riverside, Ill. Consoer, Townsend & Assocs., 360 E. Grand Ave., Chicago 10, Ill., engrs. Bids Oct. 12, awarded Oct. 28. CD 10/5.

† **Great Lakes Dredge & Dock Corp.**, 228 N. LaSalle St., Chicago 1, Ill., CA **$687,683**, removal Bridge Island and deepening adjacent channel, St. Mary's

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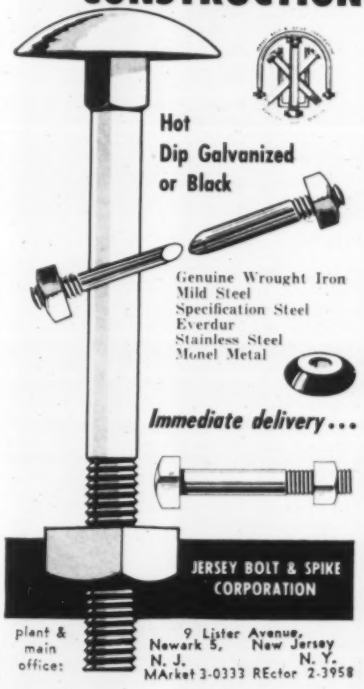

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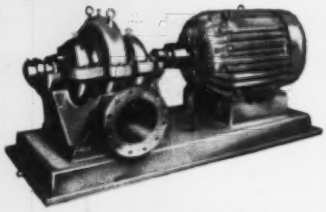

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Full Canal, Sault Ste. Marie, CIVENG 20-064-60-12, MICHIGAN. U. S. Eng., 1101 Washington Blvd., Detroit, Mich. Bids Sept. 30. CD 9/15.

BUILDINGS—LB & CA

▲ **Frank Messer & Sons, Inc.,** 4612 Paddock St., Cincinnati, O., CA **$1,000,000,** general contract BREWERY PLANT, Stone and Carlisle Sts., CINCINNATI, O. Hudephohl Co., 40 McMicken St., Cincinnati, O. Nelson Felsberg, Ingalls Bldg., Cincinnati, archt. Bender & Assocs., Westerville, O., consult. engrs.

Industrial Constr. Co., 10101 Meech Ave., Cleveland, O., CA **$754,481,** general contract BOOTH HOSPITAL addn., CLEVELAND, O. Salvation Army, 3443 Euclid Ave., Cleveland 15, O. Bids Aug. 26. CD 9/24, under LB.

Gene Resar Builders, 154 Woodbury, Elyria, O., CA Est. **$800,000,** 40 HOMES, Lake Ave. to be known as Lake Ave. Estates, ELYRIA, O. Re-Ko Builders, Inc., 154 Woodbury, Elyria, O. CD 1/16, under Gene Resar Builders as owner.

▲ **Leo C. Miller, Inc.,** 333 E. Bloom St., Louisville, Ky., LB **$1,959,000,** Base Bid (11 bidders), CITY-COUNTY BLDG., NEW ALBANY, IND. City of New Albany and Floyd Co., New Albany, Ind. Bids 10/29. CD 10/13.

▲ **Robert Behrmann Constr. Co.,** 300 S. Belt-West, Belleville, Ill., CA Est. **$1,000,000,** 1 story, 185 x 230 ft., brick, steel, concrete RECREATION CENTER, incl. 40 bowling lanes, snack bar, lounge, outdoor swimming pool, miniature golf course at Waterworks Hall between Illinois Rte. 13 and U. S. 460, BELLEVILLE, ILL. Owner c/o contractor.

▲ **Permanent Constr. Co.,** 2200 N. 3 St., Milwaukee, Wis., CA Est. **$41,834,000,** 6th unit POWER PLANT addn., Oak Creek, MILWAUKEE, WIS. Wisconsin Electric Power Co., 231 W. Michigan St., Milwaukee, Wis. Bids Sept. 25. CD 9/24.

▲ **Structural Steel Div. of The R. C. Mahon Co.,** Mound Rd. and Van Dyke, Detroit, Mich., CA Est. **$2,000,000,** furnish all structural steel for 1 story PLANT addn., SAGINAW, MICH. Saginaw Steering Gear Div., General Motors, General Motors Bldg., Detroit, Mich. CD 7/15.

MISSISSIPPI TO ROCKIES

HEAVY CONSTRUCTION—BA

▲† **Texas**—BA About 12/8—U. S. Eng., Box 1229, Galveston, Brays Bayou Channel Rectification, Houston Ship Channel, Lidstone to I.&G.N. R.R., Houston, ENG-41-243-60-25. $2,500,000-$5,000,000. CD 9/29.

▲† **N. M., Albuquerque**—SAGE FACILITIES—BA About 12/10—U. S. Eng., P.O. Box 1538, SAGE facilities, incl. two 3 story, 152 x 272 ft., and 60 x 180 ft., rein.-con. bldgs. (OPS and FAA bldg.), 1 story, bsmnt., approx. 60 x 150 ft., rein.-con. power bldg., utilities, Kirkland Air Force Base, ENG-29-005-60-38. $5,000,000-$10,000,000. CD 12/20/57.

▲† **Kan., Olathe** — AIR ROUTE TRAFFIC CONTROL CENTER—BA 1/7—Federal Aviation Agency, 4825 Troost, Kansas City 10, Mo., air route traffic control center bldg., near southeast intersection Hys. US-50 & Kan. 150, Inv. No. 3-60-20. CD 8/28.

BUILDINGS—BA

▲ **Mo., Moberly**—MEDIUM SECURITY PRISON, etc.—BA 12/16—Missouri Bd. P. Bldgs., 100 State Capitol, Jefferson City, medium security prison, etc., incl. twin 2 story dormitories, chapel, auditorium and recreation center, vocational and industrial shops, educational center, power house, warden's residence and five residences for personnel. $8,000,000. Marcel Boulicault, 411 N. 7th St., St. Louis, Zone 1, archt. Curtin & Davis, 2475 Canal St., New Orleans 12, La., consult. archts. CD 9/10/58.

▲ **Tex., Houston**—SHOPPING CENTER—Bids Asked—Louis Gale, 4023 Grennoch St., shopping center, $2,000,000; site earthwork $60,000; hard-paved area and auto center $100,000, Stella Link Rd. and Aberdeen Way. W. J. Wisdom, 1116 Hawthorne St., proj. archt. CD 10/19.

BUILDINGS—SLC

▲ **Iowa, Decorah**—MEMORIAL HALL OF SCIENCE—Luther College, Decorah, soon lets contract, 2 story, part bsmnt., 206 x 339 ft. x 74 ft., masonry, concrete, face brick, L-shaped, Valders Memorial Hall of Science, $1,000,000. Chas. Altfillisch & Assocs., 126½ W. Water St., archts. Harold E. Rucks, 455 Main St., Dubuque, engr. CD 6/29.

HEAVY CONSTRUCTION—LB & CA

IOWA—State Hy. Comn., Ames,
Booth & Olson, Inc., 529 Ins. Exch. Bldg., Sioux City, Iowa, CA **$610,519,** c. conc. pavement and wid'n 10.278 mi., FN-86, Jones Co. Bids Oct. 20. CD 10/23, under LB.

▲† **General Electric Co.,** 610 Electric Bldg., Omaha, Neb., CA **$700,965,** Sched. C, 14.4 KV station type switchgear, switchgear cubicle isolated phase bus structures and spare parts near Pierre, Oahe Reservoir Proj., ENG-25-066-60-11, SOUTH DAKOTA. U. S. Eng., 1709 Jackson St., Omaha 2, Neb. Bids Sept. 30. Awarded Oct. 22. CD 10/6, under LB:
Westinghouse Corp., 310 S. 24th St., Omaha, Neb., CA $523,020. Sched. B, 14.4 KV station types power circuit breaker (South Dakota).

† **Standard Dredging Corp.,** 200 E. 42nd St., New York, N. Y., LB **$913,989,** dredging 2 mi. Houston Ship Channel, Brady Island to and incl. Turning Basin, Harris Co., ENG-60-10, TEXAS. U. S. Eng., Box 1229, Galveston, Tex. Bids Oct. 27, CD 9/28.

(Continued on page 82)

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Chicago, Ill., Tampa, Fla., Houston, Tex., Hackensack, N. J.

(Continued from page 80)

Spaw-Glass, Inc., Box 25025, Houston, Tex., CA **$837,261**, 2 international airport terminal addns., HOUSTON, TEX. City, City Hall, Houston, Tex. Bids Oct. 7. CD 10/21, under LB.

Industrial Brownhoist Co., 2284 W. Holcombe Blvd., Houston, Tex., CA **$723,523**, (10 bidders), unloading crane tower, HOUSTON, TEX. Port Commission, Harris Co. Houston Ship Channel Navigation Dist., 1519 Capitol Ave., Houston, Tex. Bids Oct. 21. CD 10/27, under LB.

▲ **MONTANA**—State Hy. Comn., Helena, Mont.—**Gibson Constr. Co.**, Belgrade, Mont., CA **$254,599**, surf., plant mix surf. 7.994 mi. Big Sandy-Rudyard Rd., Chouteau Co.;

Mont.—**Baltrusch Constr. Co.**, Havre, Mont., CA **$730,829**, surf., plant-mix surf. 4.783 mi. Sunburst-North Rd. beginning city of Sunburst, with one 313 ft. steel railway overpass and one 168 ft. concrete interchange, Toole Co.;

Mont.—**Long Constr. Co.**, Lockwood Flats, Billings, Mont., CA **$1,556,610**, surf., plant mix surf. 6.423 mi. Mossmain-Billings Rd. with one 153 ft. dual concrete overpass and frontage road south side of highway, Yellowstone Co.;

Mont.—**Billings Constr. Co.**, 1345 Ave. E, Billings, Mont., CA **$116,772**, crush, stockpile 127,500 tons ⅜ in. gravel and 45,000 tons ½ in. gravel from crusher setups in Big Horn, Golden Valley, Musselshell, Rosebud, Yellowstone and Treasure Counties;

Mont.—**United Paving Co.**, RFD 4, Spokane, Wash., CA **$363,855**, surf., plant mix surf. 2.241 mi. Nanicke-Kalispell, Kalispell-West Glacier and Kalispell-Whitefish Rds. within city of Kalispell, Flathead Co. Grand total $3,022,665. Bids Oct. 28, awarded Oct. 29. CD 10/20.

Davis Constr. Co., Box 326, Provo, Utah, CA **$842,900**, sewage treatment plant, GREAT FALLS, MONT. City, City Hall, Great Falls, Mont. Bids Sept. 8. CD 9/17, under LB.

▲ **R. R. Potashnick**, P. O. Box 423, Cape Girardeau, Mo., CA **$5,610,520**, Alternate 1, 32 foot crest width, Diversion Dam, Dillon Dam, DENVER, COLO. Denver Bd. Water Comrs., 114 West Colfax Denver, Colo. Bids Oct. 8. Awarded Oct. 27. Owner has extended option to May 2, 1960, to substitute for the basic contract either Alternate No. 2, for $10,814,430 or Alternate No. 3, for $11,731,680. CD 10/12, under LB.

BUILDINGS—LB & CA

▲ **Design, Inc.**, 1130 Hampton Ave., St. Louis 10, Mo., CA Est. **$6,000,000**, design and construct two DORMITORIES, AUDITORIUM, ADMINISTRATION BLDG., temporary CHAPEL and LIBRARY and CLASSROOM BLDG. Daniel Boone Parkway, U. S. 40, Conway and Woods Mill Rds. ST. LOUIS COUNTY, MO. Maryville College of Sacred Heart, 2900 Meramec St., St. Louis 19 Mo. CD 10/31/58.

▲ **Ramey Constr. Co.**, Box 6, Amarillo, Tex., CA **$1,365,522**, 2 STUDENT DORMITORIES and STUDENT BLDG. addn., CANYON, TEX. West Texas State College, Canyon, Tex. Bids Oct. 15. CD 10/27, under LB.

▲ **Steinberg & Sons**, P. O. Box 9098, Dallas, Tex., LB **$1,029,870**, est. $856,250, 2 story, 53,000 sq. ft. masonry brick MUSIC BLDG., DENTON, TEX. North Texas State College, Denton, Tex. Bids Oct. 29. CD 10/8.

Jas. T. Taylor & Sons, Inc., P. O. Box 255, Fort Worth, Tex., CA **$714,376**, general contract, 3 story, 66,939 sq. ft. brick, tile, stone concrete ADMINISTRATION BLDG., FORT WORTH, TEX. Texas Christian University, University Dr., Fort Worth, Tex. Bids Oct. 27. CD 11/2, under LB.

▲ **Geo. Haikin & Assocs.**, 1600 Holcombe Blvd., Houston, Tex., CA Est. **$1,750,000**, SHOPPING CENTER, Scott St. and Old Spanish Trail, HOUSTON, TEX. O.S.T. Shopping Center, c/o Geo. Haiken Builder & Assocs., 2107 North Blvd., Houston, Tex. CD 10/22/58.

Brookwood Development Co., c/o J. B. Moffett & Ed Ferrell, Longview, Tex., Owner Builds, **$900,000**, SHOPPING CENTER, LONGVIEW, TEX.

Warner Constr. Co., Box 769, San Angelo, Tex., CA **$651,250**, ARCHITECTURE-COMPUTER BLDG., LUBBOCK, TEX. Texas Technological College, Lubbock, Tex. Bids Oct. 8. (Correction-contractor). CD 10/21, under CA.

▲ **Educators Industries, Inc.**, 3601 Bonzer St., Fort Worth, Tex., CA Est. **$1,500,000**, 1 story, 41,000 sq. ft. 40-lane BOWLING CENTER, SAN ANTONIO, TEX. National Educators Enterprises, Inc., 1761 E. Berry St., Fort Worth, Tex. Kneer & Hamm, 1804 Cont. Natl. Bank Bldg., Fort Worth, Tex., archts. CD 10/2.

J. L. Phillips, Contractor, 6158 Willers Way Houston, Tex., Owner Builds, **$405,000**, 30 DWELLINGS; **$418,500**, 28 DWELLINGS, Wilshire Estates Subdivision, SAN ANTONIO, TEX. CD 9/25.

Lembke Constr. Co., Box 771, Colorado Springs, Colo., LB **$790,000**, 3 story, 100-bed, 16,000 sq. ft. MEN's DORMITORY, 3 story, 12,000 sq. ft. 63-bed WOMENS DORMITORY, 1 and part 2 story, 12,000 sq. ft. STUDENT UNION BLDG., TRINIDAD, COLO. Trinidad Junior College, Campus, Trinidad, Colo. Swanson-Rink Assoc., 1640 Boulder, Denver, Colo., elec. and mech. engrs., Ib. Falk Jorgensen, 1240 W. Bayaud, Denver, Colo., structural engr. Bids Oct. 27. CD 10/14.

FAR WEST

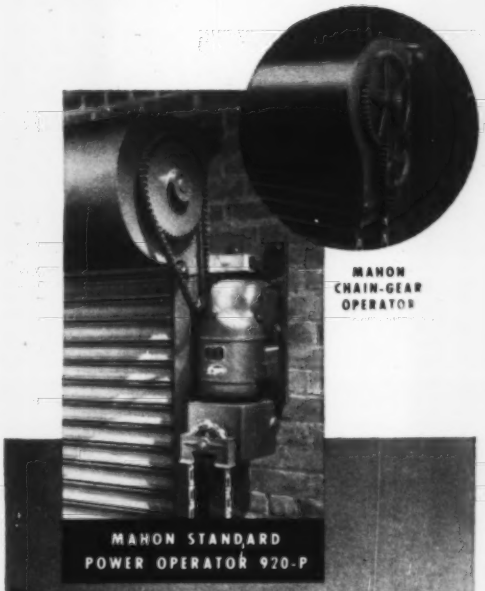
HEAVY CONSTRUCTION—BA

† **California**—BA 11/24—U. S. Eng., 751 S. Figueroa St., Los Angeles, East Twin and Warm Creeks Channel, Base Line to 5th St., San Bernardino, ENG-04-353-60-8, $700,000. CD 10/1.

(Continued on page 84)

ROLLING STEEL DOORS

Manually, Mechanically, or Electrically Operated



MAHON STANDARD
POWER OPERATOR 920-P

Here is another Rolling Steel Door application in which operating space, protection against intrusion, and fire safety were prime factors in the selection of doors for an all-metal building which houses large units of road building and road maintenance equipment.

The vertical roll-up action of Mahon Rolling Steel Doors requires no usable space either inside or outside the opening—and it eliminates overhead tracks which restrict headroom and interfere with crane handling. Their all-metal construction gives you the permanence of Bonderite-protected galvanized steel . . . maintenance is minimal; and, in steel, you get maximum protection against intrusion and fire.

No other type of door provides all of these important features which are so essential for functional efficiency in busy doorways today. When you are ready to buy a rolling steel door, check specifications carefully . . . you'll find, through comparison, that Mahon Rolling Steel Doors are built better to give you better service over a longer period of time. See Sweet's Files for complete information, including Specifications, or write for Mahon Catalogue G-59.

THE R. C. MAHON COMPANY • Detroit 34, Michigan

Sales-Engineering Offices in Detroit, New York, Chicago, Los Angeles and San Francisco
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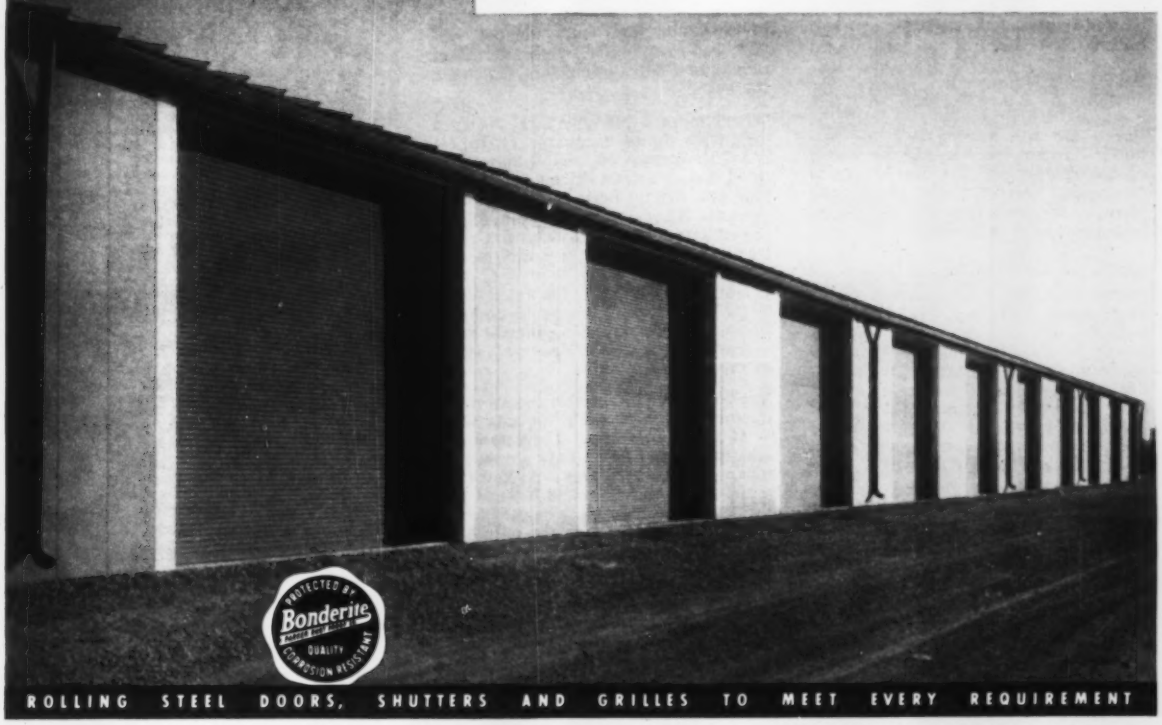
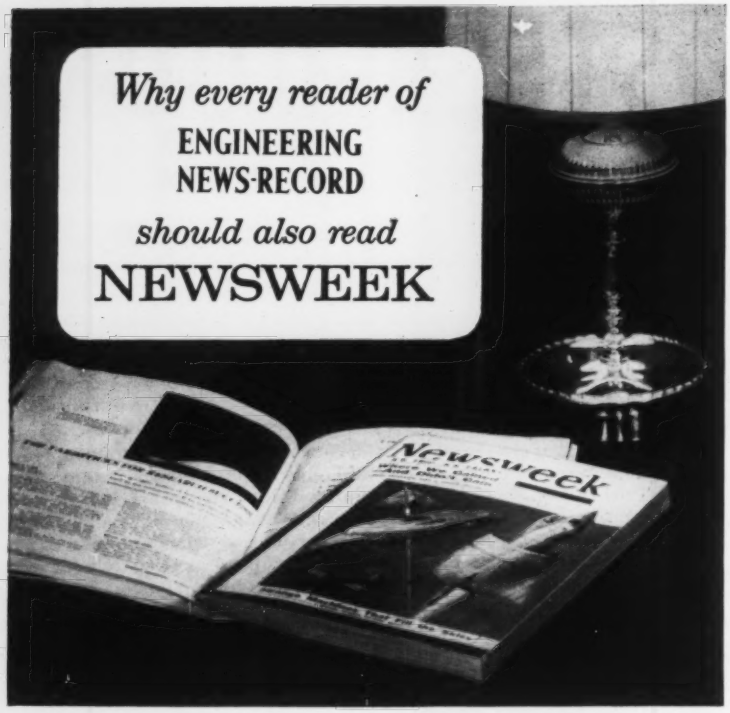
Manufacturers of Rolling Steel Doors, Grilles, and Automatic Underwriters' Labeled Rolling Steel Fire Doors and Fire Shutters; Underwriters' Rated Metalclad Fire Walls, Insulated Metal Curtain Walls, Electrified M-Floors, Acoustical and Troffer Forms, Acoustical Metal Ceilings, Steel Roof Decks, and Long Span M-Decks.



ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT

Illustrated above are Ten 12 Ft. x 13 Ft. Mahon Rolling Steel Doors installed in a new, all-metal building constructed at Wayne, Michigan, by the Wayne County Road Commission to house large units of road building and road maintenance equipment.

MAHON



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(Continued from page 82)

▲† Calif., Lompoc—DIVISION HEADQUARTERS—BA 11/24—U. S. Eng., 751 S. Figueroa St., Los Angeles, Division Headquarters, Vandenburg Air Force Base, ENG-04-353-60-30, $1,500,000.

BUILDINGS—SLC

▲ Calif., Newark—PLANT, etc.—Bemis Bros. Bag Co., 601 S. 4th St., St. Louis 2, Mo., soon lets contract, 155,000 sq. ft. bag mfg. plant and office. 17 acre site, $1,000,000. CD 9/16.

HEAVY CONSTRUCTION—LB & CA

IDAHO—State Hy. Dpt., Boise, Bids opened 10/27.

Idaho—Grant Constr. Co., Coeur d'Alene, Idaho, LB **$612,589**, constr. crushed rock base and plant mix bit. surf. 5.314 mi. U. S. 95, and roadway drainage structures and plant mix bit. surf. 1.46 mi. Winchester connection, Lewis Co.

Idaho—Aslett Constr. Co., Twin Falls, Idaho, LB **$260,946**, roadway, bit. surf. treatment and 215.92 ft. concrete bridge on 1.833 mi. State No. 34, Franklin Co. CD 10/12.

▲ UTAH—State Rd. Comn., State Capitol, Salt Lake City, Bids Opened 10/27.

Utah—Fife Constr. Co., Box 563, Brigham City, Utah, LB **$968,507**, grade, drain 7.495 mi. Brigham City to Honeyville, Proj. I-15-8 (3) 361. Box Elder Co. CD 10/10/57.

Utah—Whiting & Haymond, Box 232, Springville, Utah, LB **$412,282** (15 bidders), road mix bit. surf., 158 ft. structure, U.S. 89 4.581 mi., Proj. F-027-1 (4), Kane Co. CD 9/24/57.

ARIZONA—State Hy. Comn., 260 S. 17 St., Phoenix.

Western Constructors, Inc., P. O. Box 1604, Phoenix, Ariz., CA **$741,482**, subgrade seal s.m aggregate base, emul. asph. seal coat and 1 interchange structure, 1 mi. S. of Cordes Jct. on SR 69 and extending N. over SR 69 to Jct. of SR 69 and SR 79 then NE over SR 79 for 1.2 mi. Phoenix-Cordes Jct.-Florence Highway, Yavapai Co. Bids Oct. 9, awarded Oct. 27. CD 10/15, under LB.

▲ Stolte, Inc. and Morrison-Knudsen Co., 8451 San Leandro St., Oakland, Calif., CA **$8,738,745**, highway railroad bridge over West Branch Feather River, final link in relocation to clear way for Feather River Proj., Oroville Dam and Reservoir, Highway Portion 56 ft. wide, 2,731 ft. long, railroad portion 1,875 ft. long, Butte Co., 11 mi. North of Oroville, CALIFORNIA. State Dpt. P. Wks., 1120 N. St., Sacramento, Calif. Bids Oct. 14. CD 10/16, under LB.

Livingston Rock & Gravel Co. Inc., Ansco Constr. Co., 11382 E. Liveoak Ave., Arcadia, Calif., CA **$673,500**, furnishing placing, compacting 1,000,000 tons dirt for dikes and fills, LONG BEACH, CALIF. Long Beach Bd. Harbor Comrs., 1333 El Embarcadero St., Long Beach, Calif. Bids Oct. 20, awarded Oct. 27. CD 2/5/58.

▲ Clyde W. Wood & Sons, Inc., 6900 Tujunga Ave., P. O. Box 620, North Hollywood, Calif., CA **$4,315,404**, Storm Drain Bond Issue Proj. No. 21, Artesia-Norwalk Storm Drain, Unit 2, Lines A, B, E, F, G and H, Cities of Artesia, Dairy Valley and Norwalk, LOS ANGELES, CALIF. Los Angeles County Flood Control Dist., 2250 Alcazar St., Los Angeles, Calif. Bids Oct. 16. CD 10/21, under LB.

Hawaiian Dredging & Constr. Co., Ala Moana at Pikoi, Honolulu, Hawaii, LB **$743,000**, (13 bidders), 2nd increment jet terminal Honolulu Airport, HONOLULU, HAWAII. State Hawaii, Corner Punchbowl and Queen Sts., Honolulu, Hawaii. CD 6/5.

BUILDINGS—LB & CA

▲ Gibbons & Reed Co., 825 W. 9th N., Salt Lake City, Utah, CA Approx. **$2,000,000**, addnl. STORAGE FACILITIES at cement plant, DEVILS SLIDE, UTAH. Ideal Cement Co., Denver National Bldg., Denver, Colo. CD 9/10.

† Rutherford Constr. Co., P. O. Box 1778, Albuquerque, N. M., CA **$813,533**, SCHOOL EXPANSION, KINLICHEE, ARIZ. Bureau Indian Affairs, Dpt. Interior, Branch of Plant Design & Constr., Box 1777, Albuquerque, N. M. CD 9/10, under LB.

▲ Anderson Constr. Co., 115 S. 9 St., Tacoma, Wash., CA **$1,237,155**, general contract HIGH SCHOOL, OLYMPIA, WASH. School Dist. No. 1, Olympia, Wash. Bids Sept. 23. CD 10/5, under LB.

Capital P. & H. Co., 424 S. Jefferson St., Olympia, Wash. CA **$511,110**, mechanical contract, (Olympia, Wash.).

▲† R. B. Miles Constr. Co., P. O. Box 113, Mercer Island, Wash., LB **$1,698,866**, (8 bidders), EXHAUST AIR CONTAMINATION FACILITIES for existing reactors in 8 areas of Hanford Works, RICHLAND, WASH. Atomic Energy Comn., Hanford Operations Office, P. O. Box 550, Richland, Wash. Bids Oct. 28. CD 9/25.

R. G. Fisher Co., P. O. Box 408, Fresno, Calif., LB **$694,100**, (7 bidders), Base Bid, 1 and 2 story concrete block BUS DEPOT, H St. between Tulare and Mariposa Sts., FRESNO, CALIF. Greyhound Corp., Market and Fremont Sts., San Francisco, Calif. Bids Oct. 27. CD 10/22.

▲ William A. Drennan Constr. Co., 1325 Castaic Ave., Box 487, Oildale, Calif., LB **$1,282,000**, (5 bidders). ADMINISTRATION AND BUSINESS BLDG., STUDENT CENTER, LIBRARY, Antelope Valley College, Ave. K and 30th Sts., LANCASTER, CALIF. Antelope Valley Joint Union High School Dist., 100 W. Lancaster Blvd., Lancaster, Calif. H. J. Gogerty, 3123 W. 8th St., Los Angeles, Calif., archt. Bids Oct. 27. CD 3/4/58.

Beckner Constr. Co., 2650 River Ave., South San Gabriel, Calif., LB **$878,000**, identical bids, (8 bidders), Los Altos HIGH SCHOOL classroom and shop addns., 25325 E. Las Robles Ave. LA PUENTE,

CALIF. La Puente Union High School Dist., 15615 E. Nelson Ave., La Puente, Calif. Bids Oct. 22. CD 9/23;

J. A. Campbell, Inc., 6510 Cherry Ave., Long Beach, Calif., LB $878,000, identical bid, for Los Altos High School Addn. (La Puente, Calif.).

Clarence Ward Constr. Co., Inc., Box 806, Fresno, Calif., CA $572,535, frame, stucco Northeast ELEMENTARY SCHOOL, LOMPOC, CALIF. Lompoc School Dist., Lompoc, Calif. Bids Sept. 22. CD 10/1, under LB.

▲ **Gust K. Newberg Constr. Co.**, 600 South Lafayette Park Pl., Los Angeles, Calif., LB $4,421,000, (7 bidders), 6 story, rein.-con. ENGINEERING UNIT NO. 3, LOS ANGELES, CALIF. University of California, 405 Hilgarde Ave., Los Angeles, Calif. Bids Oct. 27. CD 10/14, under LB.

▲ **Johnson, Drake & Piper, Inc.**, 9009 San Leandro St., Oakland, Calif., LB $2,363,000, (4 bidders), MEDIUM SECURITY FACILITY, Phase 11, State Dpt. Corrections, W. O. 4721GC-19, near LOS PADRES, CALIF. State Div. Architecture, 1100 S. Grand Ave., Los Angeles, Calif. Bids Oct. 28. CD 9/18.

▲ **Macco Corp.**, 2560 California St., San Diego, Calif., CA $1,169,219, 197 DWELLINGS, Valva St., Clairmont, Melrose and Lanoitan Aves., NATIONAL CITY, CALIF. National City Development Co., Box 65, Balboa, Calif.

Royal Homes, Inc., 8001 Beverly Blvd., Los Angeles, Calif., CA $607,000, twenty-eight 220 sq. ft. frame stucco DWELLINGS, Tract 18724, NORTHRIDGE, CALIF. Harlon Bldg. Co., 8001 Beverly Blvd., Los Angeles 48, Calif. Ridgely & Wenler, 16610 Ventura Blvd., Encino, Calif., archts.

Lomita Square Corp., 40 S. Los Robles Ave., Pasadena, Calif., Owner Builds, $550,160, 24 DWELLINGS, Hastings Ranch Dr., Carriage House Rd., PASADENA, CALIF.

S&S Constr. Co., 1750 S. La Cienega Blvd., Los Angeles, Calif., Owner Builds, $772,800, 64 DWELLINGS, Graystone Ave., Longworth Ave., Harvest Ave., Tract 24984, NORWALK, CALIF.

E. F. Gladding, 9178 Olive St., Fontana, Calif. CA $876,500, 45,000 sq. ft. brick, steel HIGH SCHOOL, Perris Rd. and Nuevo Rd., PERRIS, CALIF. Perris Union High School Dist., Perris, Calif. CD 9/29; under LB.

▲ **Grandview Bldg. Co.**, 470 S. Beverly Dr., Beverly Hills, Calif., CA $1,061,300, 58 DWELLINGS, Lightfoot Pl., Hyte Rd., Graveoak Pl., ROLLING HILLS, CALIF. Birchmont Land Co., 470 S. Beverly Dr., Beverly Hills, Calif. Harris, Rice & Campbell, 8477 Beverly Blvd., Los Angeles, Calif., archts.

Tech-Bilt, Inc., 3949 Clairmont Dr., San Diego, Calif., Owner Builds, $652,250, 49 DWELLINGS, Murray Ridge Estates No. 3, SAN DIEGO, CALIF.

▲ **Theodore G. Meyer & Sons**, 200 Quint St., San Francisco, Calif., CA $2,354,466, 12 story, 211 dwelling units, Yerba Buena Plaza Annex HOUSING, Golden Gate, Turk, Buchanan and Webster Sts., incl. SENIOR CENTER RECREATION BLDG., SAN FRANCISCO, CALIF. San Francisco Housing Auth., 440 Turk St., San Francisco, Calif. Bids Oct. 6. CD 10/13, under LB.

CANADA

HEAVY CONSTRUCTION—LB & CA

▲ **Poole Constr. Co., Ltd.**, 10503 109th St., Edmonton, Alta., CA $1,600,000-$2,000,000, two 1,000 ft. concrete water diversion conduits, 18 ft. in diam., Brazeau River Hydro Development Project, ALBERTA. Calgary Power Ltd., 140 1st Ave. SW, Calgary, Alta. CD 7/22.

▲ **MANITOBA**—Dpt. P. Wks., Legislative Bldg., Winnipeg.

Hatch & Lucas, Dauphin, Man., LB $1,444,020 (6 bidders), grading Provincial Trunk Hy. No. 10, Sections 1, 2 and 3, Winnipeg.

▲ **ONTARIO**—Dpt. Hys., Parliament Bldgs., Toronto, Bids opened 10/28.

Ont.—**Miller Paving Ltd.**, 56 Blake St., Toronto, Ont. LB $156,885 (4 bidders), hot mix paving 8.76 mi. Hy. 17 from White Lake Narrows to 11.5 mi. west of White River (Contract 59-294), White River. CD 10/21;

Ont.—**Hacquoil Constr. Co. Ltd.**, 1408 Brown St., Fort William, Ont., LB $926,570 (4 bidders), grading, granular base and bridges 9.7 mi. Hy. 17 from 10 mi. east of Nipigon easterly (Contract 59-248) Nipigon. CD 10/16.

BUILDINGS—LB & CA

Commonwealth Constr. Co. Ltd., 700 Taylor, Vancouver, B. C., CA $611,420, 6 story, concrete, steel, 440 vehicle PARKING STRUCTURE, VANCOUVER, B. C. Downtown Parking Corp., 9th Ave. and Centre St., Vancouver, B. C. Strong, Lamb & Nelson, 504 4th St., Vancouver, B. C., engrs.

▲ **Eastern Woodworkers Ltd.**, Brother St., New Glasgow, N. S., CA $4,579,794, HOUSING, Mulgrave Park, HALIFAX, N. S. Central Mortgage & Housing Corp., 1032 Gottingen St., Halifax, N. S. CD 10/16, under LB.

A **N. Bail Co. Ltd.**, 1528 Mackay St., Montreal, Que. CA $660,000, 4 story, bsmnt. extension, COLLEGE LAVAL EXTENSION, MONTREAL, QUE. Rev. Freres Maristes, St. Vincent de Paul, Que. Bids Aug. 11, awarded Oct. 26. CD 8/11.

▲ **A. Janin & Co. Ltd.**, 7085 Cote des Neiges Rd., Montreal, Que., CA $1,000,000, 1 story, cement block, brick walls, SHOPPING CENTRE, Ste. Anne Blvd., QUEBEC CITY, QUE. Le Centre d'Achat Canardiere Ltee, c/o Greenspoon, Freedlander & Dunne, archts., 4151 Sherbrooke St. W., Montreal, Que. Felix M. Kruas, 1255 Laird St., Montreal, Que., engr. Bids Oct. 19, awarded Oct. 27. CD 10/16.

PROPOSED PROJECTS

WATER SUPPLY

▲ **Mich., Cadillac**—City, City Hall, ground water development of well field, exten. to water distr. sys. $1,000,000. Jones, Henry & Williams, Security Bldg., Toledo, O., engrs. Work to start Spring 1960. CD 10/24/57.

▲ **Mich., Owosso**—City, City Hall, ground water survey, development of well field, exten. water distr. sys., treatment capacity addn. $1,400,000. Jones, Henry & Williams, Security Bldg., Toledo, O., engrs. Work to start Mid-1960.

▲ **Tex., Brady**—City, City Hall, multi-purpose earthen dam Brady Creek for water supply and flood control. $2,420,000. Freese, Nichols & Endress, 407 Danciger Bldg., Fort Worth, consult. engrs. CD 5/5/48.

▲ **Tex., San Antonio**—Bexar Co. (Oak Hills) WC&ID, c/o W. L. Wright, pres., Dist. Bd. Directors, c/o Courthouse, voted bonds Oct. 23, water supply plant, $500,000; water distr. sys., $1,000,000; water lateral lines, $150,000.

SEWERS, WASTE DISPOSAL

▲ **Calif., Los Altos**—City, City Hall, defeated bonds Oct. 6, storm drainage, $1,300,000. CD 7/6.

▲ **Conn., Greenwich**—Town, Town Hall, sewage treatment plant, Gross Island, $4,000,000. Metcalf & Eddy, 1300 Statler Bldg., Boston, Mass., consult. engrs. CD 5/14.

▲ **Mass., Pittsfield**—City, Dpt. P. Wks., 33 Pearl St., interceptor sewer, trunk sewer and sewage treatment plant. $9,000,000-$12,000,000. Camp, Dresser & McKee, 6 Beacon St., Boston, consult. engrs. Bids in Spring 1960. CD 3/4/57.

▲ **Mich., Springfield**—City, City Hall, sewage treatment plant and sewerage sys. $1,700,000. Jones, Henry & Williams, Security Bldg., Toledo, O., engrs. Work may start Spring 1960.

▲ **N. Y., Stony Point**—Town, Town Hall, sewerage sys. $2,500,000.

▲ **O., Jefferson**—Bd. Comrs. Ashtabula Co., Court House, Saybrook sewerage sys., trunk sewers, $1,691,600; lateral sewer lines on public and private roads, $692,900; sewage treatment plant, $72,800. Havens & Emerson, 640 Leader Bldg., Cleveland, Zone 14, consult. engrs. CD 11/2/55.

BRIDGES

▲ **N. Y., New York**—Dpt. P. Wks., Municipal Bldg., New York, Zone 7, reconstr. Manhattan Bridge over East River, incl. rebuilding and strengthening two upper decks, Manhattan and Brooklyn Boros. $7,055,980. David B. Steinman, 117 Liberty, New York, N. Y., consult. engr.

▲ **PENNSYLVANIA**—State Hy. Dpt., 506 North Office Bldg., Harrisburg,

Beaver Co.—bridge over Ohio River between Shippenport and Midland, $5,000,000. Michael Baker, Jr., Inc., Baker Bldg., Rochester, consult. engr. W. R. Froehlich, c/o owner, ch. engr. CD 6/27/51.

▲ **Va., Roanoke**—City, City Hall,
bridge, 3rd St. S.W. $1,731,400.
bridge, 5th St. S.W. $2,568,500.
bridge, 9th St. N.E. $782,320.
bridge, 10th St. S.W. $1,809,720.
bridge, Buzzard Rock Ford. $499,400.
bridge, Colonial Ave. to 5th St. S.W. $1,968,340.
bridge, Norwich. $737,000.
underpass, Shaffers Crossing. $1,327,260. H. Cletus Brovles, c/o owner, engr.

▲ **Wash., Tacoma**—City, City Hall, bridge over City waterway at 15th St. $3,000,000. Work may start next year. M. Calkins, c/o owner, city engr.

▲ **Ont., Toronto**—Metropolitan Rd. Dpt., 75 Eglinton Ave. E., 4-lane extension Lawrence Ave. E. across Don Valley, incl. 4 bridges and wid'n Lawrence Ave. to 4-lanes, $2,000,000. Fenco-Harris, 8 Spadina Ave., consult. engrs.

STREETS AND ROADS

▲ **Calif., Los Altos**—City, City Hall, defeated bonds Oct. 6, streets, $2,200,000. CD 7/6.

▲ **NEW YORK**—State Dpt. P. Wks., State Office Bldg., Albany, Zone 1,

Herkimer Co.—reconstr. 6.96 mi. Rte. 5-S, 1½ mi. east of east city line of Utica and extending eastward along line of former electric railroad through Village of Frankfort on former Erie Canal lands to jct. with West Main St. at west village line of Ilion, FAI Proj. $1,500,000.

▲ **VIRGINIA**—State Dpt. Hys., 1221 E. Broad St., Richmond,

Henrico and Hanover Counties—3-mi. link connecting Richmond-Petersburg Turnpike road, $1,000,000.

AIRPORTS

▲† **O., Dayton**—WAREHOUSE, etc.—U. S. Eng., 237 4th Ave., Huntington, W. Va., warehouse, special

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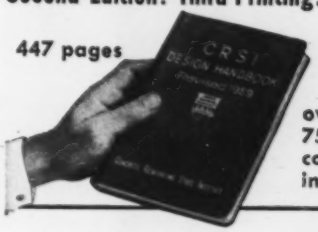

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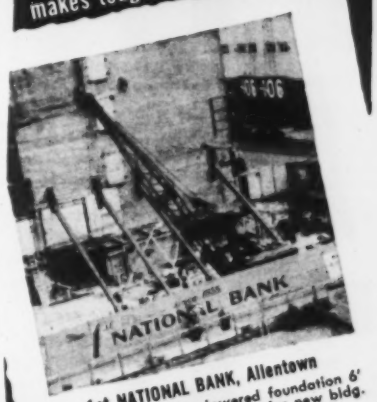

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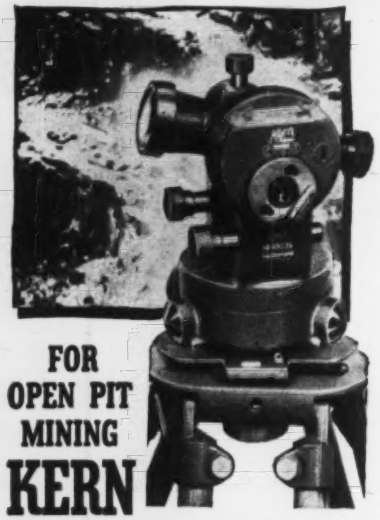

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laboratory analysis bldg., ammunition storage, Wright-Patterson Air Force Base. $1,700,000 funds released. CD 9/25.

▲† W. Va., Sugar Grove—BUILDINGS—Dist. P. Wks. Office, Fifth Naval Dist., Room 307, Bldg., N-26 Naval Base, Norfolk 11, Va., plans by Irving Bowman & Assocs., Martens & Son, and Giffels & Rossetti, Davidson Bldg., Charleston, 18 buildings, utilities, paving, U. S. Naval Radio Research Station, $3,000,000-$3,200,000. Bids in November or December. J. Stephen Watkins Co., 446 E. High St., Lexington, Ky., consult. engr. CD 9/28.

AMERICANS ABROAD

▲ Greece—PLANT—Dow Chemical International Ltd., c/o Dow Chemical Co., Midland, Mich., polystryene plastic plant. $1,000,000. Site not selected.

PUBLIC BUILDINGS

▲† Ariz., San Carlos—HOSPITAL—Bureau Indian Affairs, Dpt. Interior, C St. between 18 and 19 N. W., Wash., D. C., hospital, $1,808,000, $78,500 appropriated for planning.

▲ Calif., Arcadia—SCHOOLS—Arcadia Unified School Dist., 111 Duarte Rd., voted $1,925,000 bonds schools. CD 2/24/58.

▲ Calif., Campbell—SCHOOLS—Campbell High School Dist., 101 N. Winchester St., voted $5,000,000 bonds Oct. 20, schools. Will accept $15,000,000 state aid. CD 2/13/57.

▲ Calif., Cupertino—SCHOOLS—Cupertino School Dist., 10300 Vista Dr., voted $6,000,000 bonds Schools. CD 11/11/57.

▲ Calif., Hayward—BUS MAINTENANCE, etc.—Alameda-Contra Costa Transit Dist., Suite C, Claremont Hotel, Berkeley, voted bonds bus maintenance and storage terminal. $1,900,000. CD 11/21/58, under Calif., Berkeley.

▲ Calif., La Verne—SCHOOL—La Verne Unified School Dist., voted $516,000 bond issue and $743,000 in state aid Oct. 20, Bonita High School.

▲ Calif., Moreland—SCHOOLS—Moreland School Dist., 4610 Strawberry Dr., voted $2,000,000 bonds Oct. 20 schools. Will accept $7,000,000 state aid. CD 10/11/56, under Calif., San Jose.

▲ Calif., San Jose—SCHOOLS—Cambrian School Dist., 1962 Foxworthy Ave., voted $1,500,000 bonds Oct. 20 for chools. Will accept $3,100,000 state aid.

▲ Colo., Longmont—SCHOOL—School Dist. No. 17, 820 Main, plans by Bunts & Kelsey, 21 E. Monument, Colorado Springs, high school. $1,500,000.

▲ Conn., Greenwich—SCHOOL—Town, Town Hall, plans by J. Gordon Carr, 80 W. 40 St., New York, N. Y., 3 story, West Junior High School, Post Rd., Bryam, $1,675,000. Frederic Wood, First National Bank Bldg., consult. engr. A. Carl Stelling, 127 E. 39 St., New York, N. Y., site engr. CD 8/8/56.

▲ Ill., Antioch—Village, Village Hall defeated bonds Oct. 10, high school, Deep Lake and Loom Lake Rds. $1,785,000. Gilbert A. Johnson, American National Bank Bldg., Rockford, archt. CD 9/10.

▲ Iowa, Cedar Rapids—SCHOOLS—Cedar Rapids Community School Dist. plans by Brown & Healey, Town & Country Bldg., 1st Ave. and 36th St. S.E., Pioneer and Westwood Elementary Schools, Junior High rehabilitation, and Jefferson High addn., $2,000,000; plans by Peiffer & McConnell, 306 10th St. S.E., Fillmore primary school, Cedar Hills and Shaver Park elementary schools, Hayes cafetorium, Polk school addn., rehabilitation other schools, $1,425,000. CD 10/26.

▲ Iowa, Cedar Rapids—SCHOOLS—Bd. Educ., Community School Dist., plans by Kohlmann & Eckman, 634 Higley Bldg., Schaefer Heights and Noelridge Park area schools, Kenwood and Buchanan Schools addns., and Washington Senior High addn. $1,325,000. CD 10/26.

▲ Iowa, Cedar Rapids—SCHOOLS—Cedar Rapids Community School Dist. voted $4,990,000 bonds Sept. 29, schools. CD 8/31.

▲ Kan., Manhattan—DORMITORY—State, Bd. Regents, State House, Topeka, Kan. (CH-Kan-55D) women's dormitory, Kansas State College. $1,300,000.

▲† Ky., Fort Knox—HOUSING—U. S. Eng., P. O. Box 59, Louisville, Zone 1, plans by Warren Van Pragg, Decatur, Ill. 658 unit Capehart Housing, incl. paving, sewers, water lines. Approx. $6,000,000. Augustas & Doumas, 135 Breckenridge Lane, Louisville 7, Ky., assoc. archt. CD 4/8.

▲ Mont., Billings—DORMITORY—Eastern Montana College of Education, 6 story women's dormitory to house 300, incl. cafeteria, campus, student union section. $2,500,000. CD 1/9/57.

▲ N. M., Albuquerque—APARTMENT, etc.—University of New Mexico, State of New Mexico, 100-unit married students apartment, $900,000. CD 12/18: Fine Arts Center, $2,850,000; 30,000-seat stadium, $500,000.

▲ N. Y., Mineola—COUNTY EXECUTIVE OFFICE—Nassau Co., Dpt. P. Wks., Old County Court House, plans by Eggers & Higgins, 787 United Nations Plaza, New York, 5 story Nassau County Executive Office, West St. $3,250,000. Bids about Dec. 1. CD 5/26.

▲ Ore., Portland — STUDENT CENTER — Bd. Higher Educ., University of Oregon, Eugene, plans by Lawrence, Tucker & Wallmann, Failing Bldg., student center addn., Portland State College. $1,300,000. Cooper & Rose Assocs., Builders Exchange Bldg., consult. engrs. Bids about January. CD 5/8.

▲ Ore., Salem—ARMORY—Oregon National Guard. Plans by James L. Payne, 725 Commercial St., National Guard Armory. $1,000,000.

▲ Ore., Troutdale—SCHOOL — Multnomah Co. School Dist. No. 7, Rte. 2, Box 563, bond election Nov. 23, Junior High School, $1,250,000. Edmundson & Kochendoerfer, Henry Bldg., Portland, archts. CD 9/3.

▲ Pa., Belle Vernon—SCHOOL—Rostraver Twp. School Dist., R.D. 2, Belle Vernon, secondary school, Rostraver Twp. $1,400,000.

▲ Pa., California—GYMNASIUM, etc.—General State Auth., 18 and Herr Sts., Harrisburg, 2 story, masonry, steel gymnasium and classroom bldg., California State Teachers College. $1,000,000. A. F. Jones, c/o owner, ch. engr.

▲ Pa., Mars—SCHOOL—Adams-Mars, Middlesex-Valencia Joint School Bd., Mars, secondary school addn. (Proj. 599). $2,500,000.

▲ Pa., Newtown Square—SCHOOL — Marple-Newtown Joint School Dist., Newtown Square, secondary school, Proj. 608, $2,000,000.

▲ Pa., South Williamsport—SCHOOL—South Williamsport Area Joint School Dist., secondary school, Proj. 613, $1,500,000.

▲ Pa., Tyrone—SCHOOL—Tyrone Joint School Dist., plans by Hunter, Campbell & Rea, 3601 5th Ave., Altoona, high school. $4,150,000. CD 5/7/58.

▲ Pa., Verona—SCHOOL—Penn Twp. School Bd., Verona R.D. 1, elementary school (Proj. 597). $1,200,000.

▲ Tenn., Harriman—HOUSING—Harriman Housing Auth., plans by Morton & Sweetser, Journal Bldg., Knoxville, 200 housing units. $2,000,000.

▲ Tex., Aldine—SCHOOLS—Aldine Independent School Dist., Aldine-Westfield-Hillcrest Rds., Houston, voted bonds Oct. 17, Junior High School, $1,800,000. CD 10/6.

▲ Tex., Austin—SCHOOLS—Austin Independent School Dist., voted bonds Oct. 17, high school, $2,500,000; Junior High School No. 1, $2,250,000; Junior High School No. 2, $1,750,000; school addns., $1,000,000; school constr. $2,475,000; Elementary School No. 1, $1,000,000; Elementary School No. 2, $750,000; Elementary School No. 3, $650,000; Elementary School No. 4, $1,250,000; Elementary School No. 5, $875,000; playgrounds and recreation, $500,000. CD 9/29.

▲ Tex., Beaumont—SCHOOLS—South Park Ind. School Dist., 1025 Woodrow St., high school, Amelia area $1,550,000, elementary school $750,000; elementary school $500,000, warehouse-shop for bus storage repairs $200,000. CD 2/21/55.

▲ Tex., El Paso—CLASSROOMS, etc.—Bd. Regents, University of Texas, Main Admin. Bldg., Austin, plans by Jessen, Jessen, Millhouse & Greeven, superv. archts., 2816 Hemphill Park, Austin, and Carroll & Dauble, archts., 1001 E. Yandell Blvd., El Paso, 4 or 5 story classrooms-office $1,500,000; classrooms $1,608,400. CD 4/10.

▲ Tex., Garland — SCHOOLS — Garland Independent School Dist., voted $2,500,000 bonds, schools. CD 10/15.

▲ Tex., Houston—SCHOOL—Houston Ind. School Dist., 1300 Capitol Ave., plans by Golemon & Rolfe, 5100 Travis St., Junior-Senior High School, Oates Rd. $1,500,000. CD 5/21.

▲ Utah, Ogden—SCHOOL—Weber County School Bd., 1122 Washington Blvd., voted bonds Oct. 20, schools, $1,500,000. CD 9/4

▲ Va., Richmond—PUBLIC SAFETY—City, City Hall, public safety bldg. in Civic Center. $5,000,000.

▲ Va., Roanoke—AUDITORIUM—City, City Hall, auditorium. $4,000,000.

▲ Va., Roanoke—CITY OFFICE—City, City Hall, city office. $4,500,000.

▲ Wash., Pasco—SCHOOL—School Dist. No. 1 voted $700,000 bonds Oct. 15, Junior High School, $1,000,000. V. L. Wulff, W. 1526 Riverside St., Spokane, archt. CD 7/24.

▲ Wash., Seattle—HOUSING—University of Washington, Zone 5, plans by Walker, McGough & Trogdon, Great Northwest Life Ins. Bldg., Spokane, 300 women and 600 men student housing. $4,500,000. Constr. in 1961. CD 9/20/49.

▲ W. Va., Sugar Grove—HOUSING—Dist. P. Wks. Officer 5th Naval Dist., Norfolk 11, Va., plans by Irving, Bowman & Assocs., and Lief Valand, Davidson Bldg., Charleston, 142 unit Capehart Housing, Naval Radio Research Station. $2,343,000. (Correction—architects). CD 9/30.

▲ Man., Winnipeg—REHABILITATION CENTRE—Sanitation Bd. of Manitoba, 668 Bannatyne Ave., plans by Moody, Moore & Partners, 295 Broadway, rehabilitation centre, (part of $150,000,000 medical centre). $4,000,000.

COMMERCIAL BUILDINGS

▲ Calif., King City—HOSPITAL—King City Hospital, Inc., 624 Broadway, 50 bed hospital. $1,000,000.

▲ Calif., San Rafael—SHOPPING CENTER—Jerome C. Draper, Jr., Draper Land Co., Russ Bldg., San Francisco, plans by Robert B. Liles, 340 Pine St., San Francisco, shopping center, 21 acre site, Terra Linda Subdivision, near here. $2,000,000. Geo. S. Nolte, 3568 Redwood Hy., San Rafael, consult. engr.

▲ Del., Newark—SHOPPING CENTER—County Center, c/o Sidney H. Morris, archt., 134 LaSalle St., Chicago, Ill., 140,000 sq. ft. second section shopping center and department store, $3,000,000; third section

(Continued on page 88)

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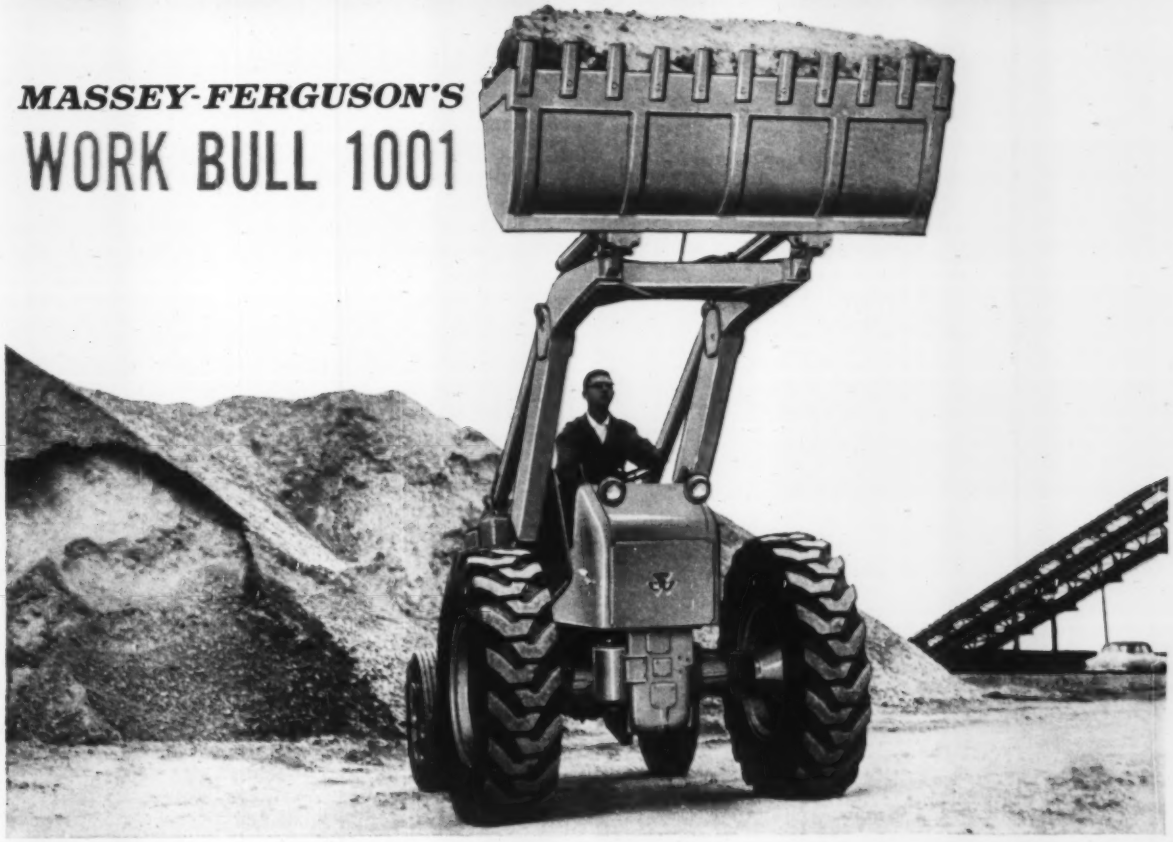

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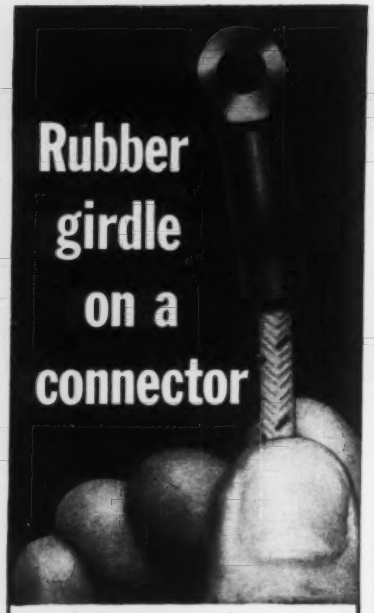

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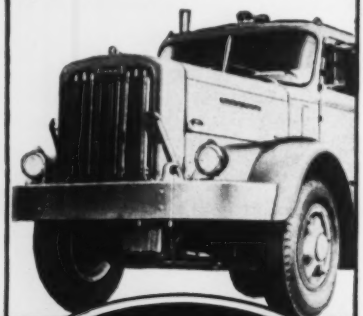

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(Continued from page 86)

130,000 sq. ft. shopping center, $3,000,000; fourth section of shopping center and 80,000 sq. ft. office bldg., $1,000,000, Ogletown, near here.

▲ **Ga., Brunswick** — MOTOR HOTEL — E. G. Barham, 111½ S. Patterson St., Valdosta, plans by Thomson & Lackey & Assocs., 107 E. Ann St., Valdosta, 200 unit motor hotel, $1,500,000.

▲ **Hawaii, Honolulu**—BEACH HOTEL—Sheraton-Hawaii, Royal Hawaiian Hotel, 14 or 15 story 1,000 room beach hotel, $10,000,000-$15,000,000.

▲ **Ill., Chicago**—ART MUSEUM—Art Institute, Michigan Ave. and Adams St., 3 story, 39,000 sq. ft. MUSEUM addn. $1,200,000.

▲ **Ill., Chicago**—OFFICE—Mid-American Club, 130 E. Randolph St., Zone 1, plans by Naess & Murphy, 80 E. Jackson Blvd., Zone 4, 20,000 sq. ft. office addn., 39th floor level, Prudential Bldg. $1,000,000. Bids about December.

▲ **La., New Orleans**—FAMILY HOUSING, etc.—Tulane University, 6823 St. Charles Ave., (CH-La-27) 166 family housing and 25 faculty apartments, $2,500,000.

▲ **Minn., Minneapolis**—OFFICE—Minneapolis-St. Paul & Sault Ste. Marie R. R. Co. (Soo Line) T. R. Klingel, ch. engr., Fifth St. and Marquette Ave., plans by Magney, Setter, Leach, Lindstrom & Erickson, 250 Foshay Tower, Minneapolis, remodel three floors First National-Soo Line Bldg. $1,000,000. CD 10/8.

▲ **Neb., Lincoln**—APARTMENT HOTEL—Lincoln Hospital Assn., 1107 Federal Securities Bldg., and Citizens Committee, 3043 S. 31st St., plans by Unthank & Unthank, 526 Sharp Bldg., 175-200 units apartment hotel for elderly persons known as Senior Citizens Apartment Hotel between 52nd and 56th Sts. north of O St. $1,000,000.

▲ **N. J., Closter**—HOUSES—Albert Carletta, 31 Thoem Ave., Rochelle Park, plans by Rudolph Novak, 89 Central Ave., Clifton, 76 houses, Herbert and Lupardi Aves., $1,500,000.

▲ **N. J., Cresskill** — CLUBHOUSE — Ercole Tamburelli, 574 Grand Ave., Englewood, clubhouse, East Slope Dr. $1,000,000.

▲ **N. J., Englewood Cliffs**—ADMINISTRATION OFFICE—Volkswagen of America Co., Inc., 476 Hudson Terrace, plans by Fellgraff-Ballou-Daly, 577 Teaneck Rd., Ridgefield Park, 2 story administration office, $1,000,000. Bids in Spring 1960. Severud-Elstad-Krueger Assocs., 415 Lexington Ave., New York, N. Y., structural engrs.

▲ **N. J., Morristown**—APARTMENT—David & Daniel Solonz; c/o E. F. Broderick, 10 Park Place, plans by Bermel dePremorvan & Asso., 94 Clinton Ave., Newark, 160 unit garden apartment, Mill St. and Sherman Place, Morris Twp. $1,500,000.

▲ **N. J., Princeton** — JUNIOR FACULTY HOUSING — Princeton University, plans by Ballard Todd & Snibbe, 123 E. 77 St., New York, N. Y. three 96 duplex units each junior faculty housing. $5,250,000.

▲ **N. Y., New York**—APARTMENT—Diplomat Apartments, Inc., 207 W. 145th St., Zone 39, plans by Wechsler & Schimenti, 118 East 25th St., Zone 10, N. Y., apartment, 311-317 East 71st St. $1,000,000.

▲ **N. Y., New York**—RESIDENTIAL, etc.—Lutheran Seamen's Center, 6 Water St., Zone 4, plans by Merrill & Holmgren, 200 4th Ave., Zone 3, 10 story residential and recreational center and adjacent 1 story chapel on 43.8x80 ft. site northeast corner Irving Pl. and Fifteenth St. $1,000,000. CD 8/7.

▲ **N. Y., New York**—APARTMENT—Owner, c/o Paul Resnick, 654 Madison Ave., Zone 21, 13 story apartment, 326-336 East 49th St. $1,200,000.

▲ **N. Y., New York**—APARTMENT—Tobar Constr. Corp., 655 Madison Ave., Zone 21, plans by Leo Stillman, 332 East 149th St., Zone 51, apartment, 333-343 East 55th St. $1,250,000.

▲ **N. Y., Potsdam**—ENGINEERING-SCIENCE LABORATORIES—Clarkson College of Technology plans by Egbert Bagg Assocs., 258 Genesee St., Utica, engineering-science laboratories. $1,500,000. CD 10/22.

▲ **N. C., Charlotte**—CHURCH—Myers Park Baptist Church, Selwyn Ave. and Queens Rd., plans by A. Hensel Fink, 1701 Arch St., Phila. 3, Pa., and Marsh & Hawkins, Chatham Bldg., Charlotte, church addn. $1,500,000. CD 5/14/59.

▲ **N. C., Fayetteville**—SHOPPING CENTER—Talleywood Shopping Center, Raeford Rd., plans by MacMillan, Hicks & MacMillan, 301 Green St., 125,000 sq. ft. shopping center, $1,000,000.

▲ **N. C., Winston-Salem**—SCIENCE—Wake Forest College, Winston-Salem, plans by Larson & Larson, Reynolda, 65,000 sq. ft. science bldg., Reynolda. Louis M. Bouvier, Reynolda, consult. engr.

▲ **O., Lorain**—SCHOOL—Catholic Diocese of Cleveland, 1027 Superior Ave., Cleveland, Zone 14, boys high school, Oberlin Ave. near 37th St. $1,500,000.

▲ **O., Mentor**—SHOPPING CENTER—Meadowlawn, Inc., c/o Robert Warren, Warren Realty Co., Mentor, plans by Damon, Worley & Samuels, Engineers Bldg., Cleveland, Zone 14, 25 unit brick, structural glass, aluminum shopping center, 1,000 car parking, Mentor Ave. and Meadowlawn Dr. $3,500,000.

▲ **Ore., Pendleton**—HOSPITAL—St. Anthony's Hospital, Pendleton, plans by Edmunson & Kochendoerfer, Henry Bldg., Portland, 4 story hospital addn., $1,800,000. Bids in March.

▲ **Tenn., Chattanooga**—MOTOR HOTEL—Read House W. 9th St., motor hotel addn., $1,000,000.

▲ **Tex., Dallas**—CHURCH, etc.—Highland Park Methodist Church, 3300 Mockingbird Lane, plans by Mark Lemmon, Thomas Bldg., church-educational. $1,164,066. CD 6/1.

▲ **Tex., Houston** — SHOPPING CENTER — Herbert A. Meisler, 3602 Grennoch St., plans by Miles F. Wortham & Assocs., proj. archts., 4316 Dupont St., 130,000 sq. ft. masonry shopping center, Airline Dr. $1,200,000.

▲ **Va., Arlington**—HOUSES—Eugene N. & James E. Hooper, 4220 Lee Highway, 205 house sub-division on Arlington Blvd. west of Mantua, $6,000,000.

▲ **Va., Newport News**—HOSPITAL—Riverside Hospital, 245-50th St., hospital, Mariners Museum, $7,022,000.

▲ **Va., Portsmouth** — HOSPITAL — Portsmouth General Hospital, Leckie St., 4 story hospital addn. $1,700,000.

▲ **Va., Richmond**—OFFICE—Presbyterian Bd. Christian Educ., 5 N. 6 St., office, $1,500,000.

▲ **Va., Roanoke** — REHABILITATION CENTER — Roanoke Memorial Hospital, Bellevue Ave. at Lake St. S. E., plans by Eubank, Caldwell & Assocs., 1st Federal Bldg., 4 story, rein.-con., brick rehabilitation center, $2,035,000.

▲ **Ont., Toronto**—APARTMENTS—Hampton Park Development Co., 3130 Bathurst St., plans by Freedman & Petroff, 3130 Bathurst St., two 6 story, masonry 210 suite apartments, $1,470,000.

▲ **Ont., Toronto**—APARTMENTS—Hemus Development Co., 828 Kingston Rd., plans by P. Dimitroff, 828 Kingston Rd., two 6 story, 70 suites each, apartments, East York, $1,000,000; 6 story, masonry, 97 suite apartment East York, $679,000.

▲ **Ont., Toronto**—APARTMENTS—Shamrock Developments Co., 10 Dempsey Cr., Willowdale, plans by Uno Prii, 220 Eglinton Ave. E., five 6 story masonry 75 suites apartments, $2,625,000.

▲ **Ont., Toronto**—APARTMENTS—Wintergreen Constr. Co. 51 Gamble Ave., plans by Venchiarutti & Venchiarutti, 194 Wilson Ave., three 6 story, masonry, steel, 171 suite apartments, East York, $1,300,000.

▲ **Que., Montreal**—HOTEL—Credit Foncier Franco-Canadien, 5 St. James St. E., plans by Duplessis, Labelle & Derome, 6655 Cote des Neiges Rd., 6 or 10 story hotel, Cote de Liesse Rd. $1,000,000.

INDUSTRIAL BUILDINGS

▲ **Calif., Fremont** — PLANT, etc. — Trailmobile, Inc., 31st and Robertson Sts., Cincinnati, O., plans by Geo. J. Schutz & Assoc., 309 Ludlow Ave., Cincinnati, O., 1 story, 230,000 sq. ft., brick, concrete block, structural steel trailer mfg. plant and office. $2,500,000.

▲ **La., Houma**—PLANT—Tidewater Oil Co., M. Esperson Bldg., Houston, Tex., gasoline plant (Hollywood-Houma Fields Area), Terrebonne Parish, near here, $1,500,000. CD 10/31/52.

▲ **Mich., Detroit**—PLANT—Detroit News, 615 W. Lafayette, plans by Giffels & Rossetti, archts.-engrs., Marquette Bldg., newspaper plant, $15,000,000.

▲ **Minn., Mounds View (P.O. St. Paul 18)**—PLANT—Brockway Glass Co., Brockway Bldg., Brockway, Pa., 1 story, 100,000 sq. ft. glass-container plant, Hy. 13 in Eagan Twp., 2 mi. south of Mendota Bridge, Minneapolis. $4,000,000. Constr. 1960.

▲ **Tex., Freeport**—PLANT—Dow Chemical Co., styrene-butadiene latex production unit, $3,000,000 Constr. 1960. CD 3/12/56.

▲ **Tex., Houston**—PLANT—Duncan Coffee Co., 1200 Carr St., plans by Neuhaus & Taylor, 3221 W. Alabama St., 197,000 sq. ft. masonry, concrete coffee roasting plant, office, services connected. $3,000,000. Rob. J. Cummins, Bankers Mtg. Bldg., consult. engr. Bids soon. CD 9/28.

▲ **Va., Gainesville**—PLANT—Atlas Machine & Iron Wks., 1252 Jefferson Davis Hy., Arlington, steel plant, $1,000,000. Constr. Spring 1960.

UNCLASSIFIED

▲ **N. J., Woodbridge**—SERVICE CENTER—Elizabethtown Consolidated Gas Co., 16 W. Jersey St., Elizabeth, service center, Rte. 1 and Green St. $2,000,000. Ebasco Services, 2 Rector St., New York, N. Y., consult. engr. CD 2/28/58.

▲ **N. Y., New York**—CARGO TERMINAL, etc.—Dpt. Marine & Aviation, Battery Maritime Bldg., Zone 4, four berth general cargo terminal and wharf, East River up stream from Manhattan Bridge. $10,000,000. Belgian Line, Inc., lessee. CD 9/9/55.

▲ **N. Y., New York**—TERMINAL AND WHARF—Dpt. Marine & Aviation, Battery Maritime Bldg., Zone 4, terminal and wharf, East River. $2,500,000. Furness Withy & Co. Ltd., lessee. CD 9/9/55.

▲ **Pa., Harrisburg**—ELECTRICAL SYS., etc.—General State Auth., 18th and Herr Sts., Harrisburg, recondition electrical sys.; revamp plumbing sys.; install combined heating-air-conditioning units; electric bird-proofing sys. at State South Office Bldg. $2,000,000. A. F. Jones, c/o owner, ch. engr.

▲ **Pa., Harrisburg**—AIR-CONDITION, ELECTRICAL SYS., etc.—General State Auth., 18th and Herr Sts., air-condition Northwest Office Bldg., Capitol and Forster Sts., $1,000,000; recondition electrical sys., revamp plumbing sys.; install combined heating-air-conditioning units; electric bird-proofing sys. State North Office Bldg., $2,500,000. A. F. Jones, c/o owner, ch. engr.

▲† **Tenn., Tullahoma**—GAS DYNAMIC TEST BLDG.—U. S. Eng., P. O. Box 2091, gas dynamic test bldg., propulsion wind tunnel, propulsion engine test cell and stand, and electrical switching station, Arnold Engineering Development Center, $5,120,000 funds released. CD 9/28.

Mayor R. Dewey Stearns says...

"Saginaw's modern water system pays for itself 365 days a year!"

"Good, fresh water—with its quality protected by miles of Transite Pipe—helps make Saginaw, Michigan, a wonderful place to live . . . work . . . and do business!"

"Busy shoppers in downtown Saginaw give an accurate indication of the active business climate our citizens enjoy . . ."

"Diversification is important to our economy. And each industry —from automotive products and heavy machinery to baking equipment, precision instruments and agriculture—*thrives on water* . . ."

"Because good water is vital to the life and growth of Saginaw, we go to one of the best raw water sources in the Midwest . . . to Lake Huron for a limitless supply of the finest and purest water."

"A water system must undergo continuous expansion to meet growing domestic, industrial and fire protection needs. Transite Pipe has helped Saginaw expand economically and efficiently since we first used it in 1933."

J-M Transite Pipe safeguards water purity... helps keep its cost low!

Made of tough, durable asbestos-cement, Transite® Pipe cannot rust . . . stays clean to protect the quality and purity of the water it carries!

Transite also saves tax dollars for other uses—it is installed quickly, economically . . . its smooth interior keeps pumping costs low . . . its Ring-Tite® Coupling conserves precious water. And, of course, Transite Pipe is noted for its unusually long life.

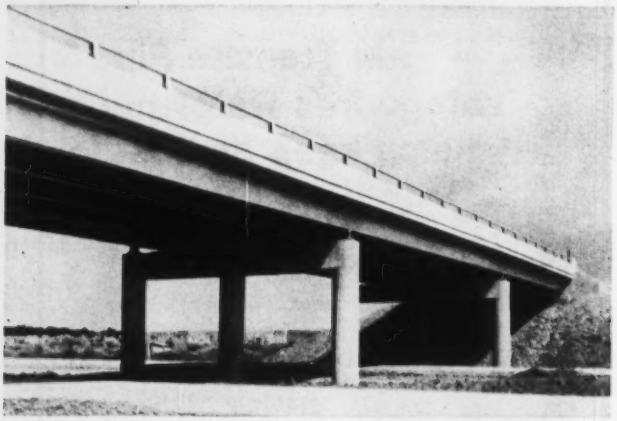
For information on how Transite Water Pipe (and Transite Sewer Pipe, too) can serve your city write Johns-Manville, Dept. N-9, Box 14, New York 16, N.Y.

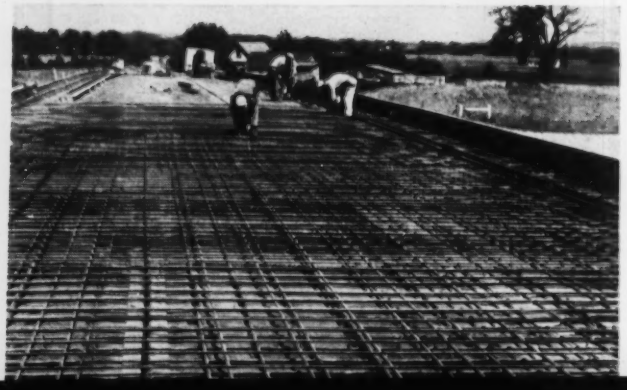
Your prosperity, welfare, safety, depend on good water . . . and plenty of it. Now is the time to support your water program . . . and water utility officials.

JOHNS-MANVILLE

JOHNS-MANVILLE JM PRODUCTS

Ohio's 1,524-mile Interstate Program





120 tons of steel reinforcement per mile will make Ohio's Interstate highways stronger and longer lasting. USS *American* Welded Wire Fabric, made of cold-drawn steel wire, withstands high unit stresses; permits construction of concrete slabs 30% stronger and up to 100 feet long. *American* Transverse Road Joint Load Transfer Assemblies also help assure a permanently smooth-riding road surface.

800 bridges, underpasses and overpasses will stud the Interstate network in Ohio. Much of the 398,670 tons of steel used in these structures—beams and girders, plates, piling, bridge railings, etc.—will be furnished by United States Steel. USS *Tri-Ten* Steel and our other High Strength Steels, USS *Cor-Ten* and USS *Man-Ten*, as well as USS "*T-1*" Constructional Alloy Steel, are available for bridges in which weight saving is essential. USS AmBridge *I-Beam-Lok* Flooring, open or concrete filled, will keep weight and maintenance to a minimum. USS *American Super-Tens* Stress-Relieved Strand and Wire are also available.

A sturdy backbone of steel goes into the deck and piers of every Interstate bridge built in Ohio. Specifically designed to produce a better reinforced concrete at lower cost, USS *Di-Lok* Bars feature a continuous diamond-shaped interlocking deformation that assures positive anchorage in the concrete and reduces cracking to the minimum. Used with *Atlas Duraplastic*, an air-entraining Portland cement that fortifies concrete against freezing-thawing weather and scaling caused by de-icing salts, this superior reinforcement ensures the maximum of strength and permanence.

is rolling in high gear

...with 600,000 tons of STEEL to speed the job!

No less than seven Interstate Highway routes will crisscross Ohio with a strategic network of high-speed freeways. Scheduled for completion by 1972, these modern expressways, linking all parts of the state, will give Ohio one of the safest, most easily traveled highway systems in the country and at the same time will put every factory, farm and business in Ohio only short hours distant from ocean-going shipping at Ohio's Lake Erie ports.

Work on this $2.3 billion system is progressing rapidly. Motorists are already using nearly 46 miles of the multi-lane freeways, and construction of 327 more miles was well underway by January 1, 1959. Ohio has put 97% of the highway funds allocated to date by the federal government to work in its record-breaking program.

Ohio's Interstate network comprises the following routes: IR 71—326 miles—Cincinnati to Conneaut, joining Cincinnati, Columbus and Cleveland and the Pennsylvania link with the New York Thruway. More than 150 miles under construction, with the 102-mile Columbus-Medina section due to be completed this year. Cost $581 million.

IR 75—213 miles—Cincinnati to Toledo. Under construction are the 34-mile Cincinnati-Dayton Expressway—first six-lane divided highway in rural Ohio. Also other sections in Troy, Piqua, Sidney, Lima, and Findlay areas. Cost $353 million.

IR 70—230 miles—east-west Wheeling, W. Va., to Richmond, Ind., will parallel U. S. 40. More than 50 miles under construction. Cost $287 million.

IR 77—175 miles—Cleveland to Marietta. Cost $290 million.

IR 90—250 miles—Toledo to Conneaut. Will be routed over Ohio Turnpike from Toledo, Lakeland Freeway through Cleveland, and Cincinnati-Conneaut Freeway east to Willoughby Hills. Section between Conneaut and Painesville under construction.

IR 80—270 miles—Toledo to Youngstown. To be routed over turnpike from Toledo at Norwalk.

IR 271—60 miles—route locations being studied.

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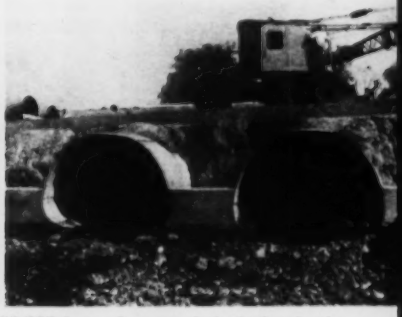
Get your free copy of this informative catalog. Here are 54 pages packed with practical products that will help you cut costs and speed up operation in every phase of highway construction. It lists all the products and the many services available through United States Steel. Just write to United States Steel Corporation, Room 2801, 525 William Penn Place, Pittsburgh 30 Pa.

Eight and a half million feet of steel guardrails will reduce the hazards of high-speed travel on Ohio's new expressways. Every curve and trouble spot will be safer when protected with USS Beam Guard Rail. More than 2,100 tons of steel will be used in the sign and route marker posts on these freeways. Straying livestock and wild animals will be kept safely off the roads by enough steel wire fencing to stretch clear across the continent. Much of it will be USS *American* Wire Fence.

Steel expedites foundation work. For cofferdam construction, USS Steel Sheet Piling provides easy installation of strong earth- and watertight excavations. In piers and abutments, where high load capacity and dependable protection against flood water and scour are needed, USS Steel H-Piles supply them. They offer a practical solution to many foundation problems, especially when unstable ground conditions are encountered. Both these time-tested products are ready for use as shipped.



26,825 tons of corrugated steel culverts will go into Ohio's expanding highways. For large drainage structures like these on Interstate 70, USS AmBridge Sectional Plate can be provided in Pipe, Pipe-Arch and Arch sections in a wide variety of sizes and gages. For smaller drainage systems, USS Galvanized Culvert Sheets ensure strength, low cost and speedy installation. Concrete pipe reinforced with USS *American* Welded Wire Fabric can also be used to good advantage.

USS United States Steel

Division of United States Steel serving the highway market: American Bridge Division, Pittsburgh, Pa. • American Steel & Wire Division and Cyclone Fence Department, Cleveland, Ohio • Columbia-Geneva Steel Division, San Francisco, Calif. • Consolidated Western Steel Division, Los Angeles, Calif • National Tube Division, Pittsburgh, Pa. • Tennessee Coal & Iron Division, Fairfield, Alabama • Universal Atlas Cement Division, New York • United States Steel Supply Division, Steel Service Centers, Chicago, Illinois

Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

BUILDINGS—LB & CA

▲ **Julius Meshberg,** 22 Woolsley Ave., Trumbull, Conn., Owner Builds, **$4,966,000,** 260 HOUSES, Gaylord Village, West Wood Rd., HAMDEN, CONN.

MIDDLE ATLANTIC

BUILDINGS—BA

▲ **N. J., Caldwell**—SCHOOL—BA 12/15—West Essex Regional Bd. Educ., high school, West Green Brook Rd. $4,785,000. David Ludlow, 332 Springfield Ave., Summit, archt. CD 1/6.

HEAVY CONSTRUCTION—LB & CA

▲† **Lane Constr. Co.,** 965 E. Main, Meriden, Conn., LB **$2,297,157,** Base Bid No. 1, LB **$2,241,774** Base Bid No. 2, (13 bidders), FY-60 apron operational and road relocation, ENG-49-080-60-9 (9), ANDREWS AIR FORCE BASE, MD. U. S. Eng., First and Douglas Sts. N. W., Wash. 25, D. C. Bids Nov. 4. CD 10/9.

BUILDINGS—LB & CA

▲ **Bregman & Lehrer, Inc.,** 101 Jelliff Ave., Newark, N. J., Owner Builds, **$5,000,000,** 215 HOUSES, Rte 520, Marlboro Twp., KEYPORT, N. J.

SOUTH

HEAVY CONSTRUCTION—LB & CA

▲ **ALABAMA**—State Highway Dpt., Montgomery, Zone 4, Ala.—**Clyde O. Mitchell,** 2890 35 Ave., N., Birmingham, Ala., CA **$1,681,086,** grading, draining, paving 4.92 mi. from Darwinto Saginaw on Int. Rte. 65, Shelby Co.;

Ala.—**Laidlaw Constr. Co.,** Wolf Ridge Rd., Mobile, Ala., **Flaco Corp.,** Whistler, Ala., and **M. C. Farmer Contractor,** 2152 Halls Mi. Rd., Mobile, Ala., CA **$2,622,982,** grading, drainage 3.351 mi. from Old Shell Rd. to U. S. 45 in Mobile on Int. Rte. 65, Mobile Co.;

Ala.—**W. S. Newell Constr. Co.,** Hope Hull, Montgomery, Ala., CA **$996,867,** grading, draining 7.641 mi. from Poellka toward Lanett on Int. Rt. 85, Chambers and Lee Counties. Bids Sept. 18. Grand total $5,300,935. CD 9/25, under LB.

▲ **TENNESSEE**—State Hy. Dpt., Nashville, Bids opened 10/30,

Tenn.—**Ruth Constr. Co.,** New Market, Tenn., LB **$3,159,462,** paving Interstate with c. conc. and crossroads with bit. materials (plant mix) 8 bridges (5 sets twin concrete deck girders, 1 single concrete deck with steel beams and 2 concrete box types) 3.373 mi. Int. Rte. No. 40, Proj. I-40-7 (15) 382, Knox Co.;

Tenn.—**Associate Contractors & Engineers,** W. Alley St., Jackson, Tenn., LB **$1,927,851,** surf.-with bank or creek gravel or chert and bit. materials, 4 sets dual concrete deck girder bridges 8.615 mi. 4 lane divided section State Rte. No. 3 (U.S. Rte. 51) Proj. F-003-3 (6), Lauderdale and Dyer Counties;

Tenn.—**Asheville Contg. Co.,** London Rd., (Biltmore Sta.) Asheville, N. C., LB **$1,022,643,** grade, drainage, 7 bridges 5.893 mi. Int. Rte. No. 40, Proj. I-40-6 (10) 280, Putnam Co.;

Tenn.—**J. B. Michael Co.,** 1021 Heywood St., Memphis, Tenn., LB **$3,537,586,** paving with c. conc., 6 bridges (3 sets dual steel girder and concrete deck, 1 set dual concrete box girder bridges, 1 single concrete deck girder bridge, widening 1 single concrete deck girder) Int. Rte. No. 55, Proj. I-55-1 (7) 4, Shelby Co.;

Tenn.—**S&W Constr. Co.,** 2630 Midland Ave., Memphis, Tenn., LB **$2,595,254,** grade, drainage, 7 bridges (2 sets dual structures, 5 single structures) 2.328 mi. Int. Rte. No. 240 (S. E. Circumferential around Memphis) Proj. I-240-1 (13) 230, Shelby Co.; CD 10/20.

MIDDLE WEST

BUILDINGS—BA

▲ **O., Lorain**—HIGH SCHOOL—BA 12/15—Bd. Educ., 1020 7th St., Admiral King High School. $3,800,000. Plans deposit $200 for general contract, $150 for mechanical contr. and $100 for electrical contract. Fulton, DelaMotte, Larson & Nassau, 6014 Euclid Ave., Cleveland, Zone 3, archts. CD 7/14/58.

BUILDINGS—LB & CA

▲ **Grant Holladay Constr. Co.,** Commercial Bldg., Dayton, O., Owner Builds, **$2,500,000,** 162 HOMES, Princeton Park, HAMILTON, O.

MISSISSIPPI TO ROCKIES

HEAVY CONSTRUCTION—BA

▲† **Texas**—BA 12/8—U. S. Eng., Box 1229, Galveston, Brays Bayou Channel Rectification, Lidstone to I&GN R R., Houston. ENG-41-243-60-258. $2,500,000-$5,000,000. CD 11/2.

HEAVY CONSTRUCTION—LB & CA

▲ **O. R. Burden Constr. Co.,** 6702 E. 21st St., Tulsa, Okla., CA Est. **$2,475,000,** 125 mi. 8- to 18-in. gas lines near Hebbronville, TEXAS. South Texas Natural Gas Gathering Co. (Coastal States Gas Producing Co.), Oil Industries Bldg., Corpus Christi, Tex.

FAR WEST

BUILDINGS—BA

▲ **Calif., Oakland**—SCHOOL—BA 12/1—Bd. Educ., 1025 2nd Ave., Castlemont High School Addn. $3,201,440. Plans deposit $50. Anderson, Hyde & Anderson, Bank of America Bldg., archts. CD 10/30/57.

BUILDINGS—LB & CA

▲ **Johnson, Drake & Piper, Inc.,** 9009 San Leandro St., Oakland, Calif., CA **$2,363,000,** general constr. MEDIUM SECURITY FACILITY, Phase 11, State Dpt. Corrections, W. O. 4721GC-19, near LOS PADRES, CALIF. State Div. Architecture, 1100 S. Grand Ave., Los Angeles, Calif. Grand total $3,449,400. Bids Oct. 28. CD 11/2, under LB.

Hickman Bros., Inc., 3170 E. 11th St., Los Angeles 23, Calif. CA **$597,300,** (4 bidders), combined-mechanical work for new medium security facility (Los Padres, Calif.);

Sherwin Electric Service, 3229 Casitas Ave., Los Angeles, Calif. CA **$489,100,** (6 bidders), electrical work for new medium security facility (Los Padres, Calif.)

CANADA

BUILDINGS—LB & CA

▲ **Anglin-Norcross Quebec Ltd.,** 892 Sherbrooke St. W., Montreal, Que., CA Est. **$3,036,000,** ADMINISTRATION, Fielding Ave. and Cote St. Luc Rd., MONTREAL, QUE. Protestant School Bd. of Greater Montreal, 3460 McTavish St., Montreal, Que. Awarded Oct. 29. CD 10/27, under LB.

LATIN AMERICA

HEAVY CONSTRUCTION—LB & CA

▲ **S.A.D.E., Lavalle** 645, Buenos Aires, Argentina, CA **$2,700,000,** 85 mi. 132 KV transmission lines, Comodor Rivadavia, ARGENTINA. Yacimientos Petroliferos Fiscales, Ave. R.S. Pena 777, Buenos Aires, Argentina.

▲ **Gardebled Hnos. S.R.L.,** Cordoba 954, Rosario, Argentina, CA **$5,550,000,** basic works, asphalt paving 95 mi. Rte. 9, ROSARIO, ARGENTINA. Vialida Nacional, Ave. Maipu 3, Buenos Aires, Argentina;

Artex Constr. Co., B. Mitre 559, Buenos Aires, Argentina, CA **$1,800,000,** basic works, concrete paving 4 mi. Rosario Access Rd. (Rosario, Argentina).

Gritty mud would mar the markings on most tapes!

This Chrome Clad® tape is Lufkin's 50-foot ANCHOR model. It *looks* quality in its hand-sewn leather case . . . it *is* quality.

A special kind of electroplating protects the tape from the damage of mud, sand and grit. The bold black markings are bonded to the steel base . . . protected by layer after layer of electroplating . . . topped by a final coat of tough chromium. Glare free, corrosion resistant, longer lasting—this is the tape preferred by every professional. Available with markings in feet, tenths and hundredths.

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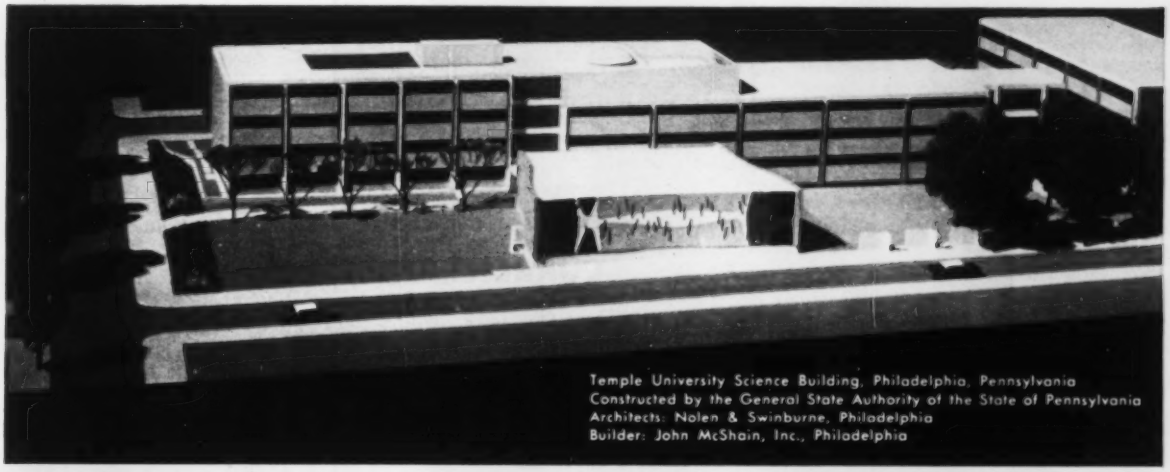
TAPES · RULES · PRECISION TOOLS

REINFORCED CONCRETE

. . . *selected for* Design Flexibility



Temple University Science Building, Philadelphia, Pennsylvania
Constructed by the General State Authority of the State of Pennsylvania
Architects: Nolen & Swinburne, Philadelphia
Builder: John McShain, Inc., Philadelphia

LaSalle College Science Building, Philadelphia, Pennsylvania
Architects: Nolen & Swinburne, Philadelphia
Builder: McCloskey & Co., Philadelphia

CONCRETE REINFORCING STEEL INSTITUTE
38 South Dearborn Street
Chicago 3, Illinois

Coming to Philadelphia—two outstanding structures of modern design—the $4-million Temple University Science Building and the $2-million LaSalle College Science Building. Both are now under construction.

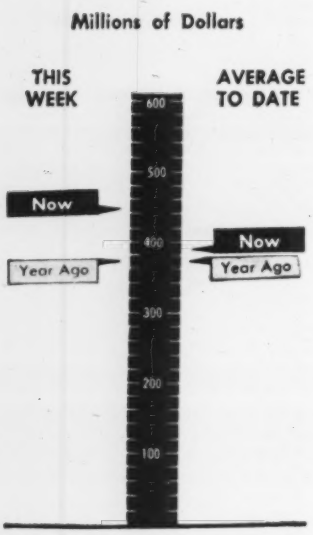
TEMPLE UNIVERSITY SCIENCE BUILDING—designed and specified in reinforced concrete because of its flexibility which permits greater design freedom, and because the architects wanted uncluttered, flat, exposed, concrete ceilings in many of the laboratory and classroom areas. Framing will be reinforced concrete, flat-plate construction. An unusual feature will be a large, reinforced concrete dome over a planetarium.

LASALLE COLLEGE SCIENCE BUILDING—the entire structure will be supported by reinforced concrete stair towers. Two reinforced concrete columns will be the only support for the central core containing lecture rooms and all mechanical services.

Before you build any type of building, investigate this flexible, economical, and timesaving medium of construction.

Construction Scoreboard

CONTRACTS ...



AMOUNT OF CONTRACTS LET

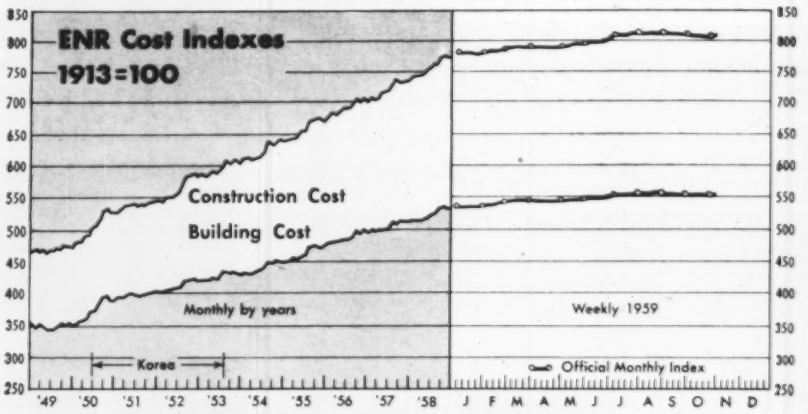
	This Week	Cum. 46 wks 1959	Chge '58-'59 %
	millions		
All Heavy Constr.	$444.3	$18,053.1	+ 4
By Ownership			
PRIVATE	265.7	9,098.7	+31
PUBLIC	178.6	8,954.4	−14
State & Municipal	148.9	6,531.9	−15
Federal	29.7	2,422.5	− 8
By Type of Work			
PUBLIC			
Waterworks	9.8	350.8	+29
Sewerage	11.4	573.3	+ 7
Bridges*	8.1	633.4	− 2
Highways	49.3	2,603.6	−21
Earthworks, Dams & Waterways	6.6	778.2	−20
Buildings:			
Excl. Housing	67.3	2,313.1	− 2
Housing	15.2	550.1	−45
Unclassified	10.9	1,162.6	− 8
PRIVATE			
Buildings:			
Mass Housing	98.8	4,099.8	+22
Commercial	49.5	1,912.1	+17
Industrial	106.8	2,624.0	+66
Unclassified	10.6	452.1	+23

*Includes private bridges

NOTE: Minimum size projects included are: Waterworks and waterways, $53,000; other public works, $88,000; industrial buildings, $110,000; other buildings, $400,000.

CAPITAL . . .

New Capital For Construction	Week of Nov. 5	Cum. 45 wks 1959	Chge '58-'59 %
	millions		
Corporate Securities	$ 91.2	$3,377.5	−25
State and Municipal:			
All Except Housing	159.7	5,182.8	− 6
Housing	....	107.5	− 6
Federal Loans	2.4	127.3	−25
Federal Aid	....	3,343.4	+29
Total Nonfederal	$253.2	$12,138.4	− 6
Federal Appropriations:			
Projects in U. S.	....	$ 3,564.1	−16
Outside U. S.	....	22.4	−51
Total New Capital	$253.2	$15,724.9	− 9


ENR Cost Indexes
1913=100
Construction Cost
Building Cost
Monthly by years
Weekly 1959
Korea
Official Monthly Index
'49 '50 '51 '52 '53 '54 '55 '56 '57 '58
J F M A M J J A S O N D
850 800 750 700 650 600 550 500 450 400 350 300 250

CURRENT COST INDEXES

ENR INDEXES (1913=100), 20-cities' average	Week of Nov. 5 1959	% Change from Oct. 8 1959	% Change from Nov. 4 1958
Construction Cost	810.16	−0.08	+4.66
Building Cost	554.31	−0.11	+3.62

To convert above indexes to 1926 = 100: Divide Construction Cost by 2.080; Building Cost by 1.850.
1949 = 100: Divide Construction Cost by 4.770; Building Cost by 3.518.

CONTRACTS AWARDED

	1959 Oct. (millions)	1959 10-Mos. (millions)	% Change from 1958 Oct.	% Change from 1958 10-Mos.
Total U. S., ENR reported	$1,493.7	$17,356.9	− 8	+ 4
Private	794.4	8,728.7	+30	+30
Public	699.3	8,628.2	−31	−13
State and Municipal	525.8	6,262.2	−36	−15
Federal	173.5	2,366.1	− 6	− 8
ENR Volume Index, 1913=100	415	554	− 7	+0.4

NEW CONSTRUCTION CAPITAL

Total U. S.	$1,265.9	$15,471.7	+66	− 7
State and Municipal Bond Sales	464.9	5,130.6	− 6	− 6
Corporate Security Sales	533.2	3,286.3	+107	−26
Federal Loans, Aid (nonfederal work)	249.8	3,468.3	+1,999	+25
Federal Appropriations (federal work) *	18.0	3,586.5	....	−10

* Includes funds for outside U. S.

MATERIALS SHIPMENTS

Unit	1959 June (Jn) July (Jl) Aug. (Ag) Sept. (S)	Cum. (No. of Mos.)	Percent Change from Year Ago Mo.	Cum.
Portland Cement, Bur Mines, thous bbls	36,836(Ag)	225,303(8)	+ 8	+16
Concrete Paving Awards, PCA, thous sq yd	6,703(S)	77,116(9)	−35	−18
Fabricated Structural Steel, thous tons	183(S)	2,293(9)	−42	−19
Bookings, AISC, thous tons	284(S)	2,352(9)	+11	+13
Reinforcing Bars, Net, AISI, thous tons	142(Jl)	1,570(7)	−19	+33
Lumber, NLMA, mil fbm	3,137(Ag)	24,399(8)	+ 2	+10
Orders, mil fbm	3,020(Ag)	24,253(8)	− 3	+10
Production, mil fbm	3,171(Ag)	24,019(8)	+ 5	+11
Clay Products, Bureau of Census				
Brick, Unglazed, Common, Face, mil bri	737.4(Jn)	3,483.9(6)	+19	+23
Vitrified Clay Sewer Pipe, thous tons	194.9(Jn)	917.2(6)	+13	+20
Structural Tile, Unglazed, thous tons	50.9(Jn)	261.6(6)	+ 3	+ 3
Asphalt Products, Bureau of Census				
Asphalt Roofing, thous sales sqs	5,915.7(Ag)	39,388.9(8)	−21	− 2
Asphalt Siding, thous sales sqs	87.2(Ag)	591.3(8)	−21	− 7
Aluminum Wrought, Net, Bur Census				
Sheet and Plate (non-heat treatable), mil lbs	83.2(Ag)	884.5(8)	+ 7	+46
Wire and Cable, mil lbs	29.4(Ag)	223.6(8)	+25	+25
Extruded Shapes (soft alloys), mil lbs	77.3(Ag)	611.2(8)	+31	+42

EMPLOYMENT AND FAILURES

Contract Const Employment, BLS, thous	3,024(S)	2,739(9)**	+ 3	+ 4
Contractor Failures, Dun & Bradstreet				
Number	191(S)	1,551(9)	+17	− 5
Liabilities, thous	$12,595(S)	$92,162(9)	+61	+ 4

**Average per month

Voters Get Choosy on Bonds

- **New York State's $500-million school proposal was the biggest construction bond issue defeated.**
- **Over-all rejection rate was 58%. Without New York, it was 14%—well under the 1958 rate.**

Voters last week rejected 55.7% of the $1.02 billion worth of construction bond proposals placed before the public.

The high rejection rate, however, is heavily weighted by a $500-million school construction proposal turned down in New York. Elimination of that amount from the total brings the rejection rate down to only 13.5% of the remaining $524.1-million national figure. That's well under the 1958 rejection rate.

The New York State proposal was a constitutional amendment that would have allowed New York City to issue $500 million in bonds over 10 years outside its debt limit. Because it was a constitutional amendment, residents of the entire state were required to act on it, although the proposal affected only the city.

The amendment was the only one of nine rejected in New York State. It was also the most controversial of the group, with arguments for and against containing political overtones in New York City. It pitted Mayor Robert F. Wagner, Jr., against City Comptroller Lawrence E. Gerosa, who spearheaded the campaign against the amendment.

The opposition's argument was that debt service on the bonds would sharply increase real estate taxes in the city. The debt was described as "needless" because growth of the city and new additions would bring much higher property valuations. That would automatically raise the city's debt ceiling. This growth would allow the city to provide needed schools within the limit on an orderly basis, the argument went.

In New York voters apparently rejected a principle, not education.

Where needs were clearly shown, the people said "Yes." In New Jersey, for example, where a rail-aid proposal was soundly trounced (see below), voters gave overwhelming support to $66.8 million worth of college construction bonds.

Hartford, Conn., with $5.6 million in proposals, rejected $4 million of the total. That was for a city exposition and sports arena. The $1.6 million approved will go for redevelopment and improved lighting.

Chicago and Cook County approved $75.5 million worth of bonds to finance bridges, docks, libraries and hospitals.

Ohio communities had proposals totaling $179.1 million, of which $124.3 million were approved. Most of the proposals concerned schools and most were approved.

But selectivity was readily apparent. In Cuyahoga County (Cleveland area), for example, $3.5 million worth of bonds for hospital construction was readily accepted. But turned down were proposals totaling $3.8 million for court houses and administration buildings.

In other sections of the state, such things as skating rinks and golf courses got short shrift, although some sewer improvements were also rejected. But, in general, community facilities such as schools, fire houses, and water projects were accepted.

Results of the bond elections indicate that today's voter is economy-conscious, but not to the extent that he will reject carefully considered building programs where the need is apparent.

The latest results are further evidence that the anti-inflation campaign being waged by the Administration is not going unheeded. That campaign killed, or at least stalled, some of the larger spending programs considered by many liberals in Congress.

Democrats rode into Washington with a large majority and with what they believed was a mandate from the people. However, while electing liberals, the voters also expressed desire for economy. They rejected 32% of the $2.1 billion in construction bond proposals in the November 1958 election (ENR Nov. 13, 1958, p. 21). That compared to a 10% and 19% rejection rate in 1956 and 1957 respectively.

When this year's Congress formulated big spending plans, it heard from home. And those calls helped stem what promised to be a big spending drive. The same mood may well prevail at the 1960 Congressional session.

. . . Rail-Aid Plan Rejected

New Jersey voters last week smashed a plan to use surplus turnpike funds to aid commuter railroads.

Officials in states with successful toll facilities and rail commuter problems were watching the New Jersey vote closely. The result will undoubtedly discourage such plans in other states.

The plan suggested by Gov. Robert B. Meyner would have used surplus revenues from the money-making New Jersey Turnpike. It would have made up to $630 million available to the rails through 1988. About $35 million of that would have been available immediately.

Exactly how the funds would have been used was never made fully clear. Mentioned were direct payment to the rails or payment to communities, which would then help the rails by reducing taxes.

Bus lines were also mentioned as possible recipients, and some said surplus funds might go for other state purposes.

Many state officials now believe it was confusion over how the funds were to be used that defeated the measure.

If that is the case, chances are the idea will crop up again. But next time, state officials may be more precise and detailed in explaining how the funds would be used and who would get them.

Meanwhile, across the Hudson River in New York City, the defeated New Jersey plan was picked up by the city's Transit Workers Union. The union suggests its new wage demands can be met by using the "profits" of such public authorities as the New York Port Authority, the Triborough Bridge and Tunnel Authority and the New York Thruway Authority.

(B&F continued p. 98)

Good fabrication and welding properties of "T-1" Steel saved time and money in the shop and on location. Owner: The Washington Water Power Company. Engineering: Ebasco Services, Inc. Scroll cases: Chicago Bridge & Iron Co. Turbines: Allis-Chalmers Co. General contractor: Morrison-Knudsen Co.

USS "T-1" Steel cuts weight of biggest turbine scroll cases 50%

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Because of the fierce pressure and erosive action of the water, it was obvious that a very strong, abrasion-resisting steel was required. USS "T-1" Constructional Alloy Steel not only met these requirements, but permitted a reduction of about 50% in plate thickness.

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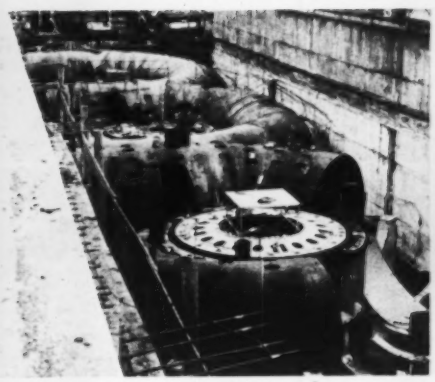
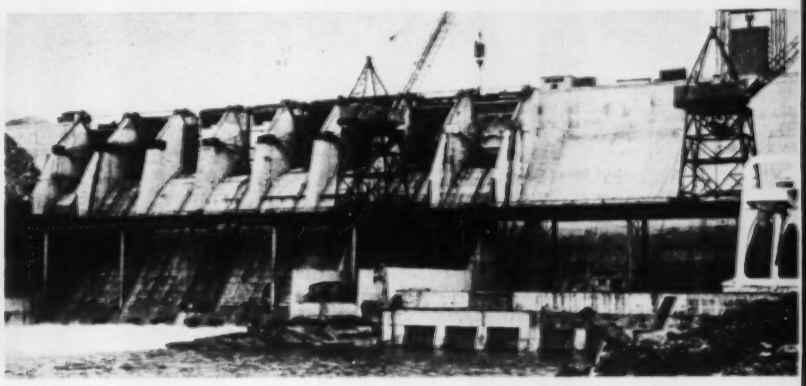


Scroll cases built with USS "T-1" Steel to obtain maximum strength with the least weight. Largest diameter is 24 feet with a speed ring about 28 feet in diameter.



Noxon Rapids Dam a new $87,000,000 power project by the Washington Water Power Company to harness the waters of Clark Fork River in western Montana.

United States Steel Corporation – Pittsburgh
Columbia-Geneva Steel – San Francisco
Tennessee Coal & Iron – Fairfield, Alabama
United States Steel Supply – Steel Service Centers
United States Steel Export Company

United States Steel

Depreciation: Changes Coming?

- **Shorter write-off period on used equipment is one hoped-for result of current tax hearings.**
- **With equipment becoming obsolete faster, that would be a big break for contractors.**

The House Ways and Means Committee next week opens hearings that could lead to extensive revision of the entire federal tax system.

One of the most important results for the construction industry could be a change in tax depreciation policies.

Depreciation is particularly important to contractors because of the construction industry's heavy investment in equipment. Interest centers on the "write-off" period—the estimated useful life of a piece of equipment during which a contractor can recover its initial cost.

The only formal guide for setting the write-off period for a given piece of equipment is the Internal Revenue Service's Bulletin F, originally published in 1942. IRS officials admit the useful lives specified in Bulletin F are generally unrealistic and hundreds of newer items of equipment aren't even listed. A move to update Bulletin F touched off a controversy within the Treasury Department. IRS officials prepared a modernized edition of the bulletin, subject to the Treasury's approval. The Treasury, however, withheld publication. Treasury argues publication would encourage revenue agents to rely solely on the bulletin to set write-off periods. Treasury would prefer its agents to reach agreements with the equipment owner based on the owner's experience and usage.

Treasury officials now indicate that a new edition of Bulletin F will not be issued.

Contractors and other capital equipment owners are hoping for shorter write-off periods because:

- Rapid technological progress makes present equipment obsolete faster.
- The shorter the write-off period, the smaller the chance that inflation will boost replacement cost of the equipment far beyond the amount recovered through depreciation.

Some revenue agents allow contractors realistic estimates of useful life for their equipment. But many agents—particularly those unfamiliar with construction—tend to rely heavily on Bulletin F. A recent check of equipment owners shows some wide disparities between Bulletin F and contractors' own estimates of the useful lives of their equipment. For example:

- For asphalt mix plants, asphalt distributors and self-propelled rollers and compactors, Bulletin F lists a useful life of 10 years. Contractors estimate an average useful life of six years.
- For concrete pavers, motor graders, off-highway dump units and some types of air compressors, Bulletin F lists a useful life of eight years. Contractors estimate average useful life of five years.
- For regular trucks and off-highway dump trucks Bulletin F has a write-off period of eight years. Contractors say it should be four years.

The 1954 Internal Revenue Code provides three specific methods a contractor can use to write-off, or depreciate, his equipment after the useful life is agreed upon by the IRS. The method chosen will determine the amount a contractor can deduct for depreciation in any particular year, thereby affecting taxable profits for the year.

Here's how the three methods work, according to the American Institute of Certified Public Accountants:

- **Straight-Line Method**—You subtract the estimated salvage value—what you can expect to get for the machine at the end of its useful life—from the initial cost. The remainder is spread in equal yearly amounts over the equipment's useful life.

For example, if a new machine costs $6,000, has an estimated useful life of 10 years, and a salvage value of $500, your total deduction for depreciation expense will be $5,500. The annual deduction will be $550 $\left(\frac{\$6,000-\$500}{10}\right)$.

- **Declining-Balance Method** – This can only be used for new equipment with a useful life of three years or more. Salvage value doesn't have to be subtracted from the initial cost, but you cannot depreciate below a reasonable estimate for salvage.

The depreciation is computed by applying a fixed percentage each year to the balance of unrecovered cost. This rate cannot be more than twice the yearly percentage that would be used in the Straight-Line Method. Thus where the Straight-Line Method sets a 10% annual deduction, the Declining-Balance Method could provide a 20% annual deduction from the unrecovered cost.

- **Sum of the Years-Digits Method**—This method also can only be used for equipment with a useful life of three years or more. The depreciation is computed by applying a fraction to the cost minus estimated salvage value.

The numerator of the fraction is the number of years of useful life remaining; the denominator is the sum of the years-digits corresponding to the estimated useful life. For the $6,000 machine with a 10-year useful

Here's Depreciation Comparison

(A $6,000 machine)

Year	Straight Line	Declining Balance	Sum of the Years-Digits
1	$550	$1,200	$1,000
2	550	960	900
3	550	768	800
4	550	614	700
5	550	492	600
6	550	393	500
7	550	315	400
8	550	252	300
9	550	201	200
10	550	161	100
	$5,500	$5,356	$5,500

1. Shown here is a prestressed concrete pile that was driven to just above ground and an additional section spliced on. A horizontal load was applied to the top of the new section in a manner that created maximum moment at the splice. Failure occurred not at the splice but below it.

2. Workman is shown lining up pile to be spliced onto one already driven into ground. Note metal jig around top of driven pile with side vents for pouring quick-setting Florok's plasticized cement. Everything needed is at job site.

3. After addition has been set in place and properly aligned, heated Florok's cement (it melts to a light fluid consistency between 265 F and 290 F) is poured into side vents of metal jig. In fifteen minutes jig can be removed and work resumed.

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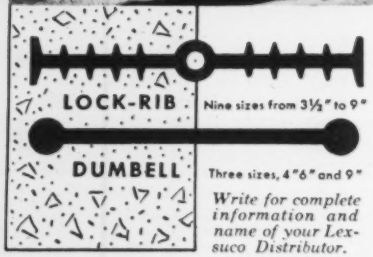

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life, the denominator would be 55 (10 + 9 + 8 + 7 + 6 + 5 + 4 + 3 + 2 + 1). In the first year, depreciation would be 10/55 of cost less salvage value; for the second year, 9/55—etc.

To compare these three depreciation methods, use the example of the $6,000 machine having an estimated useful life of 10 years and a salvage value of $500, or $5,500 to be depreciated.

With the Declining-Balance, the full amount of available depreciation was not deducted during the useful life of 10 years. That sometimes happens with this method, but the unrecovered balance is not lost as a deduction. It will be available when the equipment is sold, retired or abandoned.

Small contractors have some special advantages. In the 1958 Technical Amendments Act, Congress created a special depreciation allowance specifically aimed at helping the smaller businessman offset the drain of purchasing capital equipment.

This so-called "additional first-year depreciation allowance" works like this. In the year equipment is purchased, you may take an additional depreciation allowance of 20% on equipment costing a total of not more than $10,000 ($20,000 on a joint return). The allowance is subtracted from initial cost, without consideration of salvage value. The regular method of depreciation is then applied to the balance. To take this allowance, equipment must have a useful life of six years or more.

Depreciation methods discussed here are fairly straight-forward, but computing depreciation can be complicated by special situations. Some more frequently encountered questions are:

What happens if equipment is sold before or even at the end of its useful life, resulting in a gain or loss? The answer depends on the purpose for which the equipment was bought. If it was purchased as a capital asset to be used in the business, any profit beyond its book value (initial cost minus depreciation taken) is a capital gain, subject to a maximum tax of 25%. However, if the equipment was bought for resale, any profit or loss on the resale would be charged to income or expense.

What happens when the old equipment is traded in on new equipment? For purposes of depreciation, if the trade-in allowance is greater than the equipment's book value, this gain is subtracted from the initial cost of the new equipment. If the trade-in allowance is less than book value, the loss is added to the initial cost of the new equipment.

Wage Boosts Are Now Built In

- **Deferred increases under long-term contracts set pattern for big pay hikes again next year.**
- **Construction already leads other industries in wage increases. The average scale is $3.52.**

The construction industry continues to add a significant amount of perpetual motion to the upward trend of its labor costs.

It has chalked up two records in collective bargaining so far this year, according to The Bureau of National Affairs, a Washington newsgathering organization:

• **Wage increases won by construction workers are bigger than those granted workers in any other industry.** Average wage settlement for the first nine months was 14.7 cents an hour.

(As a result of this year's increases, the average hourly scale of union construction workers rose to $3.52 at the end of the third quarter, according to the U. S. Labor Department's Bureau of Labor Statistics. This put the industry's wage rates on October 1 about 71% above the average for 1947-49.)

• **Deferred wage increases negotiated in the construction industry have been larger and more numerous than those bargained in other industries.** Bulk of them run 10 cents an hour or more.

The trend reflected in deferred wage increases is particularly significant. These increases are automatic wage boosts agreed to now but made effective during the second or subsequent years of a labor contract. Their use is an essential part of the trend toward long-term contracts, which seek to stabilize labor costs.

These future wage increases virtually establish "settlement floors," BNA says, for wage negotiations in the years ahead and will exert strong upward pressures on future settlements.

The 1960 picture for the construction industry looks like this: Out of 392 long-term contracts that have been reviewed, 169 will grant 1960 deferred wage increases of 10 to 12 cents an hour; 101 will boost wages 13 to 15 cents; and 80 will add over 15 cents an hour to existing wages. Only 41 keep the 1960 increases under 10 cents.

In contrast to this, deferred wage increases for all industries, excluding construction, will average 7.3 cents an hour in 1960. Smallest increases, are found in aircraft, apparel, automobiles, paper, textiles and services. Some increases greater than 10 cents will occur in trucking and in wholesale and retail trades.

Industry comparisons of newly negotiated wage increases effective this year shape up about the same way.

While the construction industry has come up with an average 1959 increase of 14.7 cents an hour, other industries have trailed considerably behind. Average for all industries was 8.4 cents an hour in the first quarter, 9.8 cents in the second quarter and 8.9 cents in the third quarter.

The third quarter drop apparently can be attributed, BNA suggests, to the stiffening of management attitudes by the steel strike.

This differential between construction and nonconstruction wages will tend to be preserved by the long-term contract trend and the inherent use of deferred wage increases.

While use of these automatic increases has been common in the construction industry, it is now taking hold generally. BNA notes a sharp rise in deferred wage settlements this year and says that 39% of the 1959 labor contracts provide for deferred wage boosts —an increase of 15% over 1958.

The trend toward future wage commitments on increasingly higher levels spells trouble for the construction industry in two respects:

• **It presents a practical obstacle to the leveling off or freezing of wages except on a nation-wide scale.**

The lack of uniformity in contract terms and durations means that any uncoordinated local or industry efforts to halt the wage climb merely produce wage inequities. This was one of the basic objections raised two years ago to the construction industry voluntary wage freeze proposal of Richard Gray, president of the AFL-CIO Building and Construction Trades Department. And it may partly account for the fact that this year only 13 of the 524 construction contracts reviewed by BNA call for a 1959 wage freeze.

• **It pushes the industry closer to the day of reckoning on two of the basic labor issues dramatized by the steel strike:** What is a full day's work for a full day's pay? What should a "full day's pay" be?

Labor in Brief . . .

• **Talk it over**—Secretary of Labor James P. Mitchell suggested last week that the mutual problems of labor and management cannot be solved in legislative chambers or at the bargaining table, where tempers are often high. He urged more frequent use of periodic and informal discussions between labor and management.

• **Sign of the times?**—Walter Reuther's United Auto Workers union hopes to accumulate a $40-million strike fund by September 1961—the expiration date of the union's labor contracts with the big three auto companies. Each of the union's members will contribute $1.25 a month to the fund starting January 1. Amount will come out of monthly dues, which have just been raised to $5.00.

• **Work halted**—Heavy construction in 30 Indiana counties has been halted by an operating engineers' strike over wage demands. Union seeks 20 cents now, 15 cents next year and 15 cents in 1961 under a three-year contract.

• **Moonlighting is increasing**—The Bureau of the Census has come up with some figures that may provide some ammunition for those who oppose a shorter workweek. It says the amount of moonlighting—holding two or more jobs—has nearly doubled since 1950.

• **A good precedent?**—In an unusual bid for labor peace, the teamsters union and a New York City brewery have reached agreement on a new two-year labor contract eight months before the present contract expires.

New Labor Law Puzzles Lawyers

The provisions of the new labor law that particularly affect the construction industry become effective this week. Yet labor lawyers, contractors and construction unions are not much closer to an understanding of these provisions than they were when the law was enacted two months ago.

Confusion and uncertainty among construction men was evident at the recent Institute on the New Labor Law, sponsored by Georgetown University Law Center in Washington, D. C. Almost every clause in the new law generated some uncertainty about its specific meaning, limitations or constitutionality.

For construction, the provisions promising the most trouble are those referring to pre-hire agreements, seven-day union shop clauses, hiring halls, hot cargo exemptions, secondary boycotts, and organizational and recognition picketing.

Even the men who helped draft the new law, or administered the Taft-Hartley Act in the past, are not sure what the new law permits and what it prohibits. For example, the new hot cargo ban specifically exempts "an agreement between a (union) and an employer in the construction industry relating to the contracting or subcontracting of work to be done at the (construction) site."

According to Guy Farmer, former chairman of the National Labor Relations Board, this refers to work "normally done at the job-site." But Louis Sherman, general counsel to the AFL-CIO's Building and Construction Trades Department, says the exemption also covers "off-the-job" subs.

Similarly, a question arises as to whether a construction union may strike to enforce a subcontracting clause. Martin F. O'Donoghue, general counsel for the plumbers union, and Mr. Sherman say they may strike. But Charles M. Ryan, counsel to the House Labor Committee, says Congress did not intend to legalize a strike to enforce the subcontractor clause.

Besides trying to determine the meaning of the new law so they can comply with it, contractors are faced with other problems. One was pointed out by John K. Carroll, general counsel for the National Constructors Association. "Some of our union contracts may have to be revised in light of the new subcontracting clause," he said.

Perhaps William F. Schnitzler, AFL-CIO Secretary-Treasurer, best summed up the prevailing opinion at the Institute when he said: ". . . This new law will provide built-in unemployment insurance for the members of the legal profession as long as it remains on the statute books."

How a Government Can Move In

The government of Pakistan has established by decree "unique statutory provisions" for "quick and effective termination" of labor disputes.

The new procedure, which may prove of interest to a strike-harassed American public, embraces an unusual combination of laissez faire, voluntarism and government intervention.

Three steps have been taken to prevent labor disputes and to settle those that arise:

• **All industrial establishments employing 50 or more workers have been ordered to establish "works committees" representing both labor and management.** The committees are supposed to promote good labor-management relations and, presumably, to nip potential disputes in the bud.

• **A conciliation service has been established.** Labor disputes, actual or threatened, will be mediated by a conciliation officer. Unlike our own system, a limit of 14 days is put on the mediation of utility disputes and of 28 days on other disputes. Strikes and lockouts are banned from the time mediation begins until the dispute is settled. If a dispute is not settled at this level, the conciliation officer certifies his failure. Any party can then take the dispute to an industrial court.

• Industrial courts, composed of a former judge as chairman and one labor and one management representative as members, will be established by the central and provincial governments. Courts established by the central government will have jurisdiction over disputes affecting major ports, mines, oilfields, pipelines, refineries and other industries controlled by the government. Provincial courts will handle all other disputes. Decisions and awards of the courts will be final and binding.

Present indications are that professional lawyers will not be permitted to handle labor disputes. The government says the legalistic approach has sometimes miscarried justice and made disputes unnecessarily protracted.

Industry Warned of Need To Develop New Skills

Will the construction industry be able to find enough trained workers with the necessary skills to meet the future demands of our expanding economy?

Those "in the know" are pessimistic about the answer. Douglas Whitlock, board chairman of Structural Clay Products Institute, calls it the industry's most challenging problem.

Speaking at the North Central States Apprenticeship Conference, in Indianapolis last month, Mr. Whitlock offered two general suggestions:

• **Approach the problem of apprentice training with a sense of urgency.** Develop strong, well-financed Joint Apprenticeship Councils. Make jobs available to apprentices.

• **Adjust training programs to new techniques and new products. Be willing to drop obsolete skills and develop new ones.**

Quantity and quality failures in apprenticeship, he warned, can affect the survival of employers and crafts.

As a counterpoint to Mr. Whitlock's warnings, the California Division of Apprentice Standards says the state's apprentice completions are running behind journeymen losses. It says full advantage is not being taken of established ratios of apprentices to journeymen. The division urges greater use of public works as a training field for apprentices.

Canadian Work Threatened By a Strike of Plumbers

Plumbing contractors in British Columbia last week rejected an ultimatum by the plumbers union asking for a 30-cent wage increase over a two-year period.

The contractors face a strike that would tie up millions of dollars worth of construction work in the province and adjacent areas to the north.

Local 170 which represents 1,400 plumbers, filed notice of intent to strike following a government supervised strike ballot in which 60% of the voting members favored the action.

The union had originally asked for a 35-hour week with no pay reduction. This was equivalent to an hourly wage boost of 41 cents. A conciliation board turned it down. Contractors have upped their offer to 24 cents over two years. The union wants 10 cents now, 10 cents January 1 and 10 cents April 1.

The demand and offer are on a "take it or leave it" basis.

Political Contributions from Unions Stir Controversy

The question of whether sauce for the goose is sauce for the gander has been raised by a Minnesota proposal to prohibit political contributions by labor unions.

The proposal was submitted by a state legislative election laws commission studying proposed changes in the state corrupt practices act.

Adverse reactions to the proposal came not only from organized labor but also from the state chairmen of the Republican and Democrat-Farm Labor parties, who criticized use of double standards in legislation.

"Don't allow contributions from one side," said the Republican, "and prohibit them from the other." He urged creation of a "single standard" for both corporate and union contributions and penalties and said he preferred a reporting and disclosure law to a law imposing curbs on contributions.

The Democrat-Farm Labor spokesman said the proposal would make "second class citizens" of union members, leaving corporations and partnerships untouched.

NLRB Counsel Prepares For New Labor Law Cases

Stuart Rothman, general counsel of the National Labor Relations Board, has reorganized his office to prepare for a heavy load of labor cases under the new labor law.

Mr. Rothman's office handles unfair labor practice complaints from labor and management.

The general counsel, whose office already handles an average of 21,000 cases a year, anticipates that "thousands" more will flow into the office after the Taft-Hartley provisions of the new law become effective this week.

Sections of the law most apt to form the basis of new complaints, Mr. Rothman said, are the secondary boycott and organizational picketing provisions.

Reorganization of Mr. Rothman's office followed four months of intensive study and splits up what is known as the Division of Operations.

Three special divisions have been created:

- A time and Performance Control Unit to make sure the cases are kept moving.
- An Operations Advice Unit to give prompt advice on how to handle the new legal provisions.
- An Administrative Section which will be confined to "housekeeping."

OFFICIAL PROPOSALS

Bids: December 1, 1959

Water Supply Project Fairfax, Virginia

ADVERTISEMENT FOR BIDS

Sealed proposals will be received for the construction of a Water Supply Project by the Town of Fairfax, Virginia at the Town Office, Layton Hall, Fairfax, Virginia up to 10:30 A.M., E.S.T. on the 1st day of December, 1959; at which time and place all bids will be publicly opened and read aloud, on the following contracts:

Contract C—Filter Plant Construction
" F—Transmission Line (Section 4 Blake Lane)
" H—Pumps

The successful bidder on any of the foregoing contracts will be required to furnish a satisfactory performance bond in the amount of 100% of his contract.

The contract documents, including plans and specifications, are on file at the office of the Town Engineer, Town Hall, Fairfax, Virginia, and may be examined there or at the office of Alvord, Burdick & Howson, Engineers, Suite 1401, 20 North Wacker Drive, Chicago 6, Illinois, or at the office of Patton & Kelly, 402 W. Lee Highway, Fairfax, Virginia.

A copy of the contract documents, including plans and specifications may be obtained from either the office of Alvord, Burdick & Howson or Patton & Kelly upon a deposit of $25.00 for each of Contracts C or F and $15.00 for Contract H. The entire deposit will be returned to contractors contingent upon the plans and specifications being returned in good condition within 15 days after the date of opening bids.

The right is reserved by the Town of Fairfax to reject any or all bids or to accept any bid considered advantageous to the Town.

Certified check, cash, government bonds, or bank drafts payable to the Town of Fairfax, Virginia, or a satisfactory bid bond executed by the bidder by a surety company in an amount equal to 10% of the bid shall accompany the proposal.

Bids may be withdrawn at any time prior to the scheduled time for opening bids, but not thereafter.

Bidders shall guarantee their proposals for a period of sixty (60) days after the time and date bids are specified to be opened.

William M. Zollman, Jr.
Town Engineer
Fairfax, Virginia

Bids: December 11, 1959

Reconditioning, Reshaping and Surface Treatment Route No. 1—South Road Between Kilometers 27 and 65

DIRECTORATE OF HIGHWAYS
MINISTRY OF COMMUNICATIONS AND PUBLIC WORKS
REPUBLIC OF HONDURAS
ADVERTISEMENT FOR BIDS
CONTRACT No. 502—P (DST)

Sealed Proposals for the above noted contract described herein will be received by the Director General of Highways at the Offices of the Ministry of Communications and Public Works, Tegucigalpa, D. C., Honduras, C. A., until 10:00 A.M. Honduras Time on December 11, 1959 and then publicly opened.

The work to be done under this Contract shall be commenced on the date specified in the Notice to Proceed, or such earlier date mutually agreed upon by the Ministry and the Contractor. All work under the Contract shall be completed within 240 calendar days after such date, and consists of furnishing all plant, labor, materials and equipment, and performing all work in strict accordance with the Specifications, Schedules and Drawings forming parts thereof, for the Reconditioning, Reshaping and Surface Treatment of the South Road, (Route No. 1), between Kilometers 27 and 65.

Proposals shall be submitted covering all the work on the South Road, (Route No. 1), between Kilometers 27 and 65 as delineated on the Unit Price Schedule Form.

The approximate quantities of the principal items of work are:

Reconditioning and Preparing Subgrade	38 LK
Select Material Base	42,000 CM
Two Course Surface Treatment	312,000 SM

Prospective bidders can obtain copies of the plans, specifications and contract documents for a fee of 50 Lempiras from the Office of the Director General of Highways. nancial Statement and Experience Questionnaire and a Plan and Equipment Questionnaire on form supplied by the Directorate of Tegucigalpa, Honduras. A Contractor's Fi-Highways will be required of all bidders. All proposals must be on the forms prescribed by the Directorate of Highways and must comply with the terms and conditions set forth in the Contract Documents.

Each Proposal must be accompanied by a Proposal Guaranty in the amount of ten (10) percent of the total amount shown in the Proposal Form Unit Price Schedule in the form and manner specified in the Instruction to Bidders.

Individuals or firms doing business under ficitious names and all foreign corporations shall register with the Ministry of Communications and Public Works, Tegucigalpa, D. C., Honduras, C. A., before any proposals submitted by such corporations, individuals or firms will be considered.

Award of the above contract, if any award be made, will be to the lowest responsible bidder or bidders. The Government reserves the right to reject any and all proposals and further reserves the right to waive any informality in proposals received when such rejection or waiver is in the best interest of the Government.

The Government of Honduras has entered into a Loan Agreement with the International Bank for Reconstruction and Development for a loan in various currencies to finance the foreign exchange costs of a Highway Construction Project of which this contract will form a part. The Government of Honduras has also entered into a Loan Agreement with the Development Loan Fund of the United States Government for a loan to finance the local currency costs of the Project.

DIRECTOR GENERAL OF HIGHWAYS
Ing. Angel Casanova B.

October 19, 1959.

Bids: December 1, 1959

The Furnishing and Installing of Elevators and Moving Stairs at Lewiston and Tuscarora Power Plants

POWER AUTHORITY OF THE STATE OF NEW YORK
ADVERTISEMENT FOR PROPOSALS
SPECIFICATION NO. PA-N-23033
NIAGARA CONTRACT NO. NP-42

NOTICE TO CONTRACTORS: The Power Authority of the State of New York will receive sealed proposals for the furnishing and installing of Elevators and Moving Stairs for the Lewiston Power Plant and the Tuscarora Power Plant in Lewiston, Niagara County, New York, until 10:30 A.M. Eastern Standard Time on the 1st day of December, 1959, at the Authority's Office, 18th Floor, The Coliseum Tower, 10 Columbus Circle, New York 19, New York, at which time and place the proposals will be publicly opened and read aloud.

The work includes the design, manufacture, delivery, installation, and maintenance of fourteen elevators and four moving stairs and the associated equipment and services.

The work shall be completed on or before February 1, 1963.

Plans, Specifications and Proposal Forms for the work will be on file in the Authority's Office and in the offices of the Engineer, Uhl, Hall & Rich, 230 Congress Street, Boston 10, Massachusetts, and may be inspected by prospective bidders during office hours, and may be obtained from the Power Authority of the State of New York, 18th Floor, The Coliseum Tower, 10 Columbus Circle, New York 19, New York, upon application and prepayment of a fee of Ten ($10.00) Dollars per initial set of contract documents and Five ($5.00) Dollars per set for additional sets, no part of which will be refunded.

Bids must be made and returned in duplicate in accordance with instructions contained in the Information for Bidders. Guarantee will be required with each bid in an amount not less than 20 percent of the gross sum bid.

The right is reserved to reject any or all bids.

W. S. CHAPIN
GENERAL MANAGER

PA-N-23033

OFFICIAL PROPOSALS

RATE: The rate for Official Proposal advertising is $2.40 per line or fraction set solid. Where the advertisement is set other than solid, the space is measured by total space occupied and charged on basis of 12 lines to the inch.

CLOSING DATE: Friday 10:30 A.M. for issue dated the following Thursday.

SEND COPY TO: Official Proposal Division, Engineering News-Record Class. Adv. Div., P. O. Box 12, N. Y. 36, N. Y.

Bids: November 19, 1959

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, Public Buildings Law, and special provisions for projects financed with Federal Aid Funds, sealed proposals will be received until ten-thirty o'clock A. M., eastern standard time on the 19th day of November, 1959, by Henry A. Cohen, Director, Bureau of Contracts, 12th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

STATE OF NEW YORK — DEPARTMENT OF PUBLIC WORKS — ALBANY, NEW YORK
LETTING OF NOVEMBER 19, 1959

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 1, G. L. Nickerson, District Engineer, 353 Broadway, Albany 1, New York						
Greene (Rte. 23)	FARC 59-153	Hunter-Windham, Pt. 2, S.H. 797 Cairo-Windham, Pt. 4, S.H. 5583 Cairo-Windham, Pt. 3, S.H. 8053 Project F-1159(3)	4.96	Asph. Conc. Pavt. = 4.91 Miles; Misc. Work = 0.05 Mi. R.C. Slab Bridge 25.1' Sp. R.C. T-Beam Bridge 36.3' Sp. Comp. Beam Bridge 43.6' Sp.	$58,000 Plans $5	$1,073,000
Rensselaer (Rte. 22)	C.R. 59-4	Center Berlin-Petersburg, S.H. 1421 (Cemetery Shown on R.O.W. Map 111, Parcel 179)	....	Removal of Human Remains	$70 No Plans Proposal Only $2	1,200
Rensselaer (Rte. 22)	FARC 59-152	Center Berlin-Petersburg, S.H. 1421 Stephentown-Center Berlin, S.H. 8163 Petersburg-North Petersburg, S.H. 8059 Project F-257(4)	6.98	Asph. Conc. Pavt. = 6.94 Miles; Misc. Work = 0.04 Mi. R.C. Twin Box Br. 21' Sp. R.C. Slab Br. 30.5' Sp.	$93,000 Plans $5	1,687,000
DISTRICT No. 2, L. Ketchum, District Engineer, 109 No. Genesee Street, Utica 1, New York						
Oneida (Rtes. 12 & 12C)	R.C. 59-155	Marcy Hill-Trenton, S.H. 931 Whitesboro-Trenton, S.H. 5325	....	Remova lof 169 Trees at Var. Locations	$700 Plans $5	13,000
Oneida (Rte. 46)	R.C. 59-158	Durhamville-Rome, S.H. 1157	7.38	Asph. Conc. Type 1A Pavement	$62,000 Plans $5	1,098,000
DISTRICT No. 3, E. E. Towlson, Acting District Engineer, 333 E. Washington Street, Syracuse, New York						
Cortland Onondaga & Oswego	R.C. 59-156	Various State Highways on Rtes. 5, 11, 13, 41, 49, 3, 92, 20SY, 257 & 281	....	Removal of 198 Trees	$600 No Plans Proposal Only $2	11,000
Onondaga (Int. Tour. Rte. 81)	FISH 59-23M	Interstate Route 505 (Nedrow to Tully) FISH 56-11 and FISH 56-12 Project I-81-2(28)67	11.47	Misc. Work (Roadside Devel. Drain., Fenc. & Maint. Area)	$28,000 Plans $5	516,000
Tompkins (Rte. 38)	FARC 59-130	Groton Village, S.H. 1002 Project F-610(7)	0.27	Asph. Conc. Type 1A Pavt. R.C. Twin Box Br. 20'	$8,000 Plans $5	144,000
DISTRICT No. 4, B. F. Perry, District Engineer, Barge Canal Terminal, Rochester 1, New York						
Genesee & Monroe (Rte. 19)	R.C. 59-159	Lake, Part 1 (Brockport-Sweden), S.H. 171 Lake, Part 2 and Fourth Section, S.H. 492 Leroy-Brockport, Pt. 4, S.H. 1755	4.67	Asph. Conc. Pavt.	$27,000 Plans $5	490,000
Orleans (Rte. 104)	R.C. 59-157	Gaines-Murray, Pt. 1, S.H. 8237 Gaines-Murray, Pt. 2, S.H. 5697 & Ridgeway-Gaines, S.H. 8202	4.50	Asph. Conc. Pavt. Type 1A = 4.47 Mi. Misc. Work = 0.03 Mi. R.C. Triple Open Box Br. 50.9'	$35,000 Plans $5	644,000
DISTRICT No. 5, E. G. H. Youngmann, District Engineer, State Office Bldg., 65 Court Street, Buffalo 2, New York						
Erie	FAC 59-19	City of Buffalo: Kensington Expressway Arterial Highway, Sect. 1, Cont. II (Hickory St. to E. Utica St.) Project U-377(17)	1.69 (0.73 Acc.)	Asph. Conc. Pavt. = 0.73 Mi. (Grad, Walls & Water Lines = 1.39 Mi. Misc. Work = 0.30 Mi. 5 Hy. Sups. Comp. I-Beams 2 Sp. 154.2', 2 Sp. 158.3', 4 Sp. 183' 2 Sp. 151.3' and 2 Sp. 118.9'; 2 Ped. Overpass I-Beam with Conc. Slab; 4 Sp. 206.5'; 3 Sp. 151.1'	$210,000 Plans $10	3,803,000
Niagara	FASS 59-25	Carmen Road, Pt. 3, Co. Rd. 131 Project S-573(1)	3.04	Asph. Conc. Pavt.	$18,000 Plans $5	335,000
DISTRICT No. 6, J. H. Thomas, District Engineer, State Office Bldg., 30 West Main Street, Hornell, New York						
Allegany (Rte. 21)	R.C. 59-112	Andover-Alfred Station-Almond, S.H. 5502	3.17	Asph. Conc. Pavt. = 3.16 Mi. Misc. Work = 0.01 Mi.	$27,000 Plans $5	489,000
Steuben (Rtes. 15 & 17)	FARC 59-154	Painted Post-West City Line of Corning, Pt. 1, FASH 59-10, Corning-Painted Post, S.H. 5026 Proj. U-225(17); U-593(13)	0.90	Electrical Lighting Facilities	$2,800 Plans $5	50,000
Steuben (Rte. 414)	R.C. 59-160	Corning-Post Creek, S.H. 1745A	3.18	Asph. Conc. Pavt. = 3.16 Mi.; Misc. Work = 0.02 Mi. 3 Brs. R.C. Twin Box 23.1' Sp. 26.8' Sp. 23.5' Sp.	$50,000 Plans $5	887,000
Yates (Rte. 14)	R.C. 59-114	Starkey-Dresden, Pt. 2 S.H. 8353	8.49	Asph. Conc. Pavt. Widen & Repair Exist. 12 Sp. I-Beam Br. 719.9'	$100,000 Plans $5	1,850,000
DISTRICT No. 7, R. W. Sweet, District Engineer, 444 Van Duzee Street, Watertown, New York						
Clinton (Rtes. 348 & 9B)	R.C. 59-161	Rouses Point Village, S.H. 5228 Rouses Point-Canadian Line, S.H. 5337 Rouses Point Village-International Line, S.H. 9225	1.23	Reinf. Conc. Storm Sewer Pipe	$9,000 Plans $5	159,000
Clinton	FASS 59-26	Peasleeville Road, Co. Rd. 16 Project S-549(1)	4.33	Bit. Double Surf. Treat. Pavt. R.C. Twin Box Br. 32.3'	$28,000 Plans $5	497,000
DISTRICT No. 8, K. G. Rauer, District Engineer, Pleasant Valley Road, Poughkeepsie, New York						
Rockland	PIP 59-1	Palisades Interstate Parkway Sect. 2 and Part 1 (N. J. St. Line to Rte. 202)	14.62	5' Aluminum Chain Link Fence	$8,000 Plans $5	140,000
DISTRICT No. 9, J. C. Frederick, District Engineer, 71 Frederick Street, Binghamton, New York						
Chenango	FAC 59-18 FASH 59-24	City of Norwich: East Main Street Arterial Highway East River Road State Highway Project U-620(11)	1.45	Asph. Conc. Type 2B = 0.86 Mi., Asph. Conc. = 0.57 Mi. Misc. Work = 0.02 Mi. Br. 3 Sp. Comp. I-Beam 201.6'	$60,000 Plans $5	1,091,000
Schoharie (Rte. 146)	FARC 59-150	Gallupville-West Township, S.H. 8481 Project S-820(2)	1.84	Asph. Conc. Pavt.	$23,000 Plans $5	421,000
DISTRICT No. 10, M. E. Goul, District Engineer, 325 W. Main Street, Babylon, L. I., New York						
Kings (Int. Tour. Rte. 278)	FIGE 59-1	Interstate Route Connection 512 Gowanus Expressway, Cont. 1A (Third Ave. at 60th St. to Seventh Ave. 65th St. to 92nd Street) Project I-278-1(44)	2.07	Demolition of Buildings	$55,000 Plans $5	1,003,000
Nassau	PSC 7277	Elimination of Grade Crossings of the Long Island Railroad (Main Line and Central Branch) with Carnation Ave., Tulip Ave., Tyson Ave. and Plainfield Ave. in the Village of Floral Park	2.42 (1.48 Acc.)	Railroad Track Relocation and Misc. Work = 2.42 Mi. Asph. Conc. Pavt. = 1.48 Mi.; 8 Plate Girder R.R. Crossings 130.7', 177.4', 177.4', 64', 64.5', 80.7', 75.2' and 65'; 3 R.C. Slab Pedestrian Sub. Crossings 17.7', 10' and 10'; Floral Park Viaduct R.C. Slabs 1047.5'	$400,000 Plans $10	7,116,000
Queens	B.P. 59-77	Rockaway Beach (Beach 62nd Street to Beach 70th Street)	....	Four Stone Groins Beach Protection	$45,000 Plans $10	870,000

(Continued on following page)

OFFICIAL PROPOSALS

(Continued from preceding page)

Any projects in this letting that are on the Federal Aid highway systems are subject to the provisions of the "Federal-Aid Highway Act of 1956", being Public Law 627, 84th Congress, approved June 29, 1956, and are also subject to the applicable New York State statutes.

In compliance with the provisions of Section 115 (Prevailing Rate of Wage), Public Law 627, the minimum wages to be paid laborers and mechanics are included in wage schedules that are set out in the bid proposal.

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "Information for Bidders" in the Public Works Specifications, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as Amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bond shall conform to the provisions of the Highway Laws, as set forth in "Information for Bidders".

The right is reserved to reject any or all bids.

J. BURCH McMORRAN
SUPT. OF PUBLIC WORKS

Contractors Watch

This Section—

for new projects. Publish your announcements through the proposal sections of *Engineering News-Record* and get their bids.

OFFICIAL PROPOSALS

Bids: December 1, 1959

Construction of Project Illinois 2-31

Sealed bids will be received for the construction of Project Illinois 2-31; consisting of three (3) sixteen (16) story elevator buildings, comprising in all four hundred fifty-six (456) dwelling units, bounded by West Roosevelt Road, South Racine Avenue and South Blue Island Avenue; utility work and related construction in connection with the installation of steam supply and return lines extending from the North-West corner of the intersection of Throop Street and West Washburn Avenue, to Project Illinois 2-31, and site improvements, Chicago, Ill.; until 2 p.m., local time, on the 1st day of December, 1959, by mail or by hand in Room 1500 of the offices of the Chicago Housing Authority, 608 S. Dearborn St., Chicago 5, Ill., immediately after which time and at such place all bids will be publicly opened and read aloud.

Proposed forms of Contract Documents, including plans and specifications, are on file at the office of the Architect, Mielke & Smith, 53 West Jackson Boulevard, Chicago 4, Ill.

Copies of the Documents may be obtained on or after November 3, 1959, by depositing $75.00 in the form of a cashier's check, certified check, or postal or telegraphic money order with Mielke & Smith, Architect, for each set of Documents obtained. Such Deposit will be refunded to each bidder who returns the Plans, Specifications and other Documents in good condition within ten (10) days after bid opening.

Alvin E. Rose
Executive Director

Bids: December 8, 1959

Contacts BP-180.001 & LGA-270.010

THE PORT OF NEW YORK AUTHORITY

Sealed proposals for the following work will be received at the Office of the Chief Engineer, Room 1160, 111 Eighth Avenue, New York 11, N. Y. until 2:30 P.M. on date indicated, at which time said proposals will be opened and read in Room 1160.

Contract BP-180.001—Brooklyn-Port Authority Piers—Pier 7—Deck Construction—Deposit $30.00 per set of documents—Bids will be received until 2:30 P.M. on Tuesday, December 8, 1959.

Contract LGA-270.010—LaGuardia Airport—Drainage Line and Pump Station No. 5—Deposit $30.00 per set of documents—Bids will be received until 2:30 P.M. on Tuesday, December 8, 1959.

Contract documents may be seen at the Office of the Assistant Chief Engineer for Design, Room 1115, 111 Eighth Avenue, New York 11, N. Y. Documents will be furnished upon receipt of the above deposit (each set including one copy of the Contract Drawings) for not more than three sets to any one company. Additional sets will be furnished upon payment of an amount for each set equal to the deposit indicated above, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt will be issued. The receipt shall be delivered to Room 1115, where the documents will be furnished.

Those who have submitted a bid on the contract directly to the Authority will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
S. Sloan Colt, Chairman

New York, November 12, 1959

OFFICIAL PROPOSALS

Bids: December 1, 1959.

New Jersey Turnpike Authority

ADVERTISEMENT FOR PROPOSALS
CONTRACT NO. N-93

Proposals are invited for Contract No. N-93 which involves the fabrication and erection of one steel overhead sign bridge, complete with three interior illuminated signs, over the Northbound roadways of the Turnpike, just South of the Newark Airport Interchange, in Essex County, New Jersey.

The principal items of work include:

Treated Timber Piles	1,000 Lin. Ft.
Class B Concrete	80 Cu. Yds.
Structural Steel	72,600 Lbs.
3-Inch Underground Asbestos-Cement Conduit	950 Lin. Ft.
#1/0 A.W.G. RWN Single Conductor	4,300 Lin. Ft.

Proposals will be received at the New Jersey Turnpike Authority Administration Building, New Brunswick, New Jersey, until 11:00 o'clock, Eastern Standard Time, on the morning of December 1, 1959, at which time and place said proposals will be publicly opened and read.

Contract documents may be examined during office hours on or after November 5, 1959, at the office of the Authority, and will be furnished upon payment of Ten Dollars ($10.00) for each set, not refundable.

NEW JERSEY TURNPIKE AUTHORITY
Joseph Morecraft, Jr., Chairman

October 30, 1959
N-93

Bids: December 2, 1959

Narrows Bridge Piers

TRIBOROUGH BRIDGE AND TUNNEL AUTHORITY

SEALED BIDS WILL BE RECEIVED BY Triborough Bridge and Tunnel Authority at its office, Administration Building, Randall's Island, Manhattam, New York 35, N. Y., as follows:

Until 11 A.M. on Wednesday, December 2, 1959

For Narrows Bridge Contract No. NB-1B, Brooklyn Tower Pier. The bid must be accompanied by a deposit in the amount of $250,000.00

and

For Narrows Bridge Contract No. NB-1S, Staten Island Tower Pier. The bid must be accompanied by a deposit in the amount of $250,000.00.

Bidders may submit bids for either one or both of the above contracts.

Piers will be founded on open dredged caissons in The Narrows, New York Bay. Alternate design for Brooklyn pier provides shallow open dredged caisson supported on 36" diameter piles to rock.

Plans, specifications and contract documents may be purchased at the office of the Authority for $25.00, which will not be refunded.

Read the Official Proposal Columns of

ENGINEERING NEWS-RECORD

This Week and Every Week

OFFICIAL PROPOSALS

Bids: December 15, 1959

Philadelphia, Penna.
Procurement Department
Water Department

Sealed bids will be received in Room 313, City Hall Annex, until 2:30 P.M. (E.S.T.) on Tuesday, December 15, 1959, and opened at that time, for Bid No. 2430—Work No. S-2563-F.

Main Relief Sewer in 22nd Street from Berks Street to a Point 20' N. of N.H.L. of Dauphin Street.

PRINCIPAL ITEMS OF WORK

Excavation in Tunnel	—15,975 cu. yds.
Excavation in Open Cut	— 1,500 cu. yds.
13'0" dia. Sewer in Tunnel	— 2,270 lin. ft.
Manholes	— 5
Overflow Chamber	

Proposal forms, questionnaires and specifications may be obtained from the Water Department, in Room 1132, City Hall Annex, Juniper Street and Filbert Street, Philadelphia 7, Penna. Blueprints of plans may be purchased at bidder's expense, directly from the Keystone Blue Paper Company, 1230 Arch Street, Philadelphia 3, Penna.

No bids will be received unless bidder is qualified by the Procurement Commissioner. The questionnaire form with all questions fully answered must be filed with the Water Commissioner, 1113 City Hall Annex, at least one (1) week prior to the date of opening bids.

Each proposal must be accompanied by security in form and amount as set forth in the proposal form.

Bids: December 16, 1959

Sewerage Project
Muhlenberg Township Authority,
Berks County, Pa.

Sealed proposals for separate Contracts stated below will be received by Elmer Manwiller, Secretary, Muhlenberg Township Authority, at 2840 Kutztown Road, Hyde Park, Reading, Penna., until 2:00 P.M. Eastern Standard Time, December 16, 1959, and will there be publicly opened and read shortly thereafter. Proposals will be for furnishing all necessary labor, materials, and equipment, and performing all work of the separate Contracts. Each proposal shall be accompanied by a certified check or bid bond in an amount not less than ten (10) percent of the bid total, all in accordance with the Contract Documents.

Copies of the Contract Documents, including Drawings and Specifications, will be on file (for inspection purposes only) at Muhlenberg Township Authority Building, 2840 Kutztown Road, Hyde Park, Reading, Penna. They may also be seen at the office of Gannett Fleming Corddry and Carpenter, Inc., Engineer, 600 North Second St., Harrisburg, Pa., from whom they may be obtained upon deposit of the following indicated amounts per set. Not more than two (2) sets of any particular Contract will be permitted a prospective bidder. Checks shall be made payable to Gannett Fleming Corddry and Carpenter, Inc.

Contract One:

CONSTRUCTION OF A SEWERAGE SYSTEM $70.00

(Part A) Consisting of all sewers and appurtenances to be constructed to serve the areas known as Hyde Park, College Heights, and Wedgewood Heights.

(Part B) Consisting of all sewers and appurtenances to be constructed to serve the areas known as Cherokee Ranch, South Temple, Hyde Crest, Muhlenberg Park, and a section of Riverview Park.

(Bidders will be permitted to submit bids for Part A or Part B as separate contracts, and also for Part A plus Part B as a combined contract; however, it will be mandatory for all bidders submitting a bid for Part A plus Part B as a combined contract to also submit bids for Part A and Part B as separate contracts. The right is reserved to award separate contracts for Part A and Part B, or for a combined contract consisting of Part A plus Part B, whichever may appear to be in the best interest of the MUHLENBERG TOWNSHIP AUTHORITY.)

Contract Two:

GENERAL CONSTRUCTION OF SEWAGE PUMPING AND EJECTOR STATIONS $30.00

Contract Three:

PLUMBING WORK IN CONNECTION WITH A SEWERAGE PROJECT..$25.00

Contract Four:

HEATING WORK IN CONNECTION WITH A SEWERAGE PROJECT..$25.00

Contract Five:

ELECTRICAL WORK IN CONNECTION WITH A SEWERAGE PROJECT..$25.00

Full refund will be made only to actual bidders on the Contracts stated above, for return of one (1) set, no more, of a particular Contract in good condition within fifteen (15) calendar days after bid opening; refund for return of all other sets within the same period will be fifty (50) percent of deposit. No refund will be made for Contract Documents returned later than fifteen (15) calendar days after bid opening.

MUHLENBERG TOWNSHIP AUTHORITY
Gannett Fleming Corddry
and Carpenter, Inc.,
Engineers

Bids: November 16, 1959

Kindley Air Force Base
Bermuda

Tenders for Sub-Trades and material prices, will be received by the undersigned until 9:00 A.M., Monday, November 16, 1959 for all prices required for the construction of Surplus Commodity Housing, Kindley Air Force Base, Bermuda.

E.G.M. Cape International Ltd.
4898 Western Ave.
Montreal 6, Quebec
Canada

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-5256) will be received at Yuma, Arizona, until 10 a.m., Pacific Standard Time, December 15, 1959, for furnishing labor and materials for earthwork, concrete lining and structures, Wellton-Mohawk Main Conveyance Channel, Station 0-22.31 to Station 1176+65 BK, Wellton-Mohawk Division, Arizona-Gila Project. Location east of Yuma, Arizona, in Yuma County. Principal items are 668,000 cu. yds. excavation; 10,600 cu. yds. riprap; 11,750 lin. ft. concrete pressure pipe; and other work. Completion time 425 days. For particulars, address Bureau of Reclamation, Bin 151, Yuma, Arizona; P. O. Box 427, Boulder City, Nevada; or Building 53, Denver Federal Center, Denver 25, Colorado. Floyd E. Dominy, Commissioner.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-5254) will be received at Ephrata, Washington, until 10 a.m., Pacific Standard Time, December 8, 1959, for furnishing labor and materials for earthwork, concrete lining, and structures, Block 88 laterals, wasteways, and drain, West Canal laterals, Columbia Basin Project, Washington. Location west of Othello, Washington. Principal items are 418,000 cu. yds. excavation; 96,000 cu. yds. blended earth lining; 2,400 cu. yds. concrete in lining; 875 cu. yds. concrete in structures; 9,000 lin. ft. concrete pipe; and other work. Completion time 425 days. For particulars, address Bureau of Reclamation, P. O. Box 368, Ephrata, Washington; or Building 53, Denver Federal Center, Denver 25, Colorado. Floyd E. Dominy, Commissioner.

EMPLOYMENT OPPORTUNITIES

DISPLAYED RATE:

The advertising rate is $39.20 per inch for all advertising appearing on other than a contract basis. Frequency rates quoted on request.

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Subject to Agency Commission.

NOVEMBER 26TH ISSUE

CLOSES

NOVEMBER 16TH

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$2.40 per line, minimum 3 lines. To figure advance payment count 5 average words as a line.

Position Wanted ads take 1/2 of above rate.

Box numbers—count as 1 line.

Discount of 10% if full payment is made in advance for 4 consecutive insertions.

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ADDRESS BOX NO. REPLIES TO: Box. No. Classified Adv. Div. of this publication. Send to office nearest you.
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• *POSITIONS VACANT*

Graduate engineer with design experience in hydraulics, hydrology, flood control, hydroelectric and/or allied fields. Permanent employment with large midwestern consulting firm. Send resume and salary requirements to P-2710, Engineering News-Record.

Engineer, Architectural, Structural or Civil- experienced in prestressed concrete design. Send references, resume, date available and salary requirements to Box 10368, San Antonio 21, Texas.

Civil Engineer—presently registered or capable of becoming registered in Missouri; to join young expanding firm in the photogrammetric field. Some client contact, some field work and design. Excellent future for ambitious man. Furnish resume and salary requirements. P-2903, Engineering News-Record.

Superintendent Illinois building construction company, state education and experience in reply to P-2904, Engineering News-Record.

Sales Manager: Successful, high-rated, young, manufacturer of building construction machines, requires General Sales Manager with proven accomplishments, same capacity, same industry in past 10 years. Able to organize and develop hard-hitting sales. Progress to General Manager. Salary $15,000; more depending on increased sales and profits. Reply fully, Box 72, Cincinnati, 38, Ohio.

Top level Checker, capable of checking any type structures; such as bridges, (beam, girder, bascule, etc.), commercial buildings, large gantry cranes, etc. Must be willing to help with detailing (rarely) if necessary. One of the three top jobs in the Drafting Dept. Permanent. Opening due to retirement of employee with 32 years service. Solid Milwaukee, Wisconsin fabricator. P-2991, Engineering News-Record.

Construction Superintendent—Experienced in Industrial and Public Buildings. Must be efficient and able to assume complete responsibility for Project. Send Qualifications and Salary desired. P-2971, Eng. News-Record.

Wanted: Engineer for position as Technical Adviser having thorough knowledge and experience in development, construction and maintenance of Public Housing Projects. Must be familiar with preparation of plans and programs, and to act as liaison between Regional Public Housing Administration, Local Housing Authority, Architects and Contractors. Permanent position in the maintenance of entire local program in large southeastern city. Submit resume of qualifications and salary wanted with application. Civil engineering or architectural graduate preferred. P-2995, Engineering News-Record.

Engineer, registered in Ohio, experienced in handling complete engineering and design layout of lots, roads and utilities, and supervising construction of land development for housing projects. P-2966, Eng. News-Record.

Engineer, heavily experienced in manufacturing all types of precast and prestressed concrete products. Excellent opportunity for aggressive conscientious individual. P-2960, Engineering News-Record.

(Continued on opposite page)

• POSITIONS VACANT

(Continued from opposite page)

Superintendent—Bureau Water and Sewers. The City of Batavia, New York is accepting applications for the position of Superintendent, Bureau of Water and Sewers. Will have charge of water filtration plant, water distribution operations and sewage disposal system. Desired qualifications include college degree in sanitary or civil engineering with experience in sanitary operations preferred. Eligibility for Professional Engineers license preferred but not required. Salary range $6408 to $7302. Send resume and application to City Administrator, City Hall, Batavia, New York.

Public Works Engineer—Immediate Opportunity for a graduate Civil Engineer with California Registration and six years experience. Annual Salary $9,348—$11,364 depending on qualifications. Kern County Personnel Department, Civic Center, Bakersfield, California.

Wanted: Superintendent for 1½ ton Standard Asphalt Plant. Salary. Full time position. One month's vacation winter months. Other benefits. Age: 30-45. Location: Connecticut. Must be able to handle entire operation & run tests etc. Present volume between 35 & 40,000 tons yearly. When replying state approximate weekly salary desired and past experience or education. Engineering degree preferred but not essential. P-3008, Engineering News-Record.

Engineers. Architectural, Structural, Heating & Ventilating engineers with 5 to 10 years' experience on all types of industrial plants. Positions are with prominent consulting Engineering Company in Eastern Pennsylvania. Please submit complete resume with salary requirements to P-2997, Engineering News-Record.

Wanted: Draftsmen and Estimators. Reinforcing steel and building materials. Permanent employment with midwestern firm. Please send resume. P-2984, Engineering News-Record.

Sales Engineer—to represent expanding prestressed concrete co. in Iowa. Excellent opportunity for right man. Send complete resume and salary requirements. All replies held in strictest confidence. Prestressed Concrete of Iowa, Inc. Box 822, Iowa Falls, Iowa.

Wanted — Competent Engineer to prepare sewer and waterworks plans and plans for water and sewage treatment plants. Must be experience, reliable and trustworthy. Give education, experience, references and salary required and when can report. Position permanent, opportunities dependent on applicant. P-3005, Engineering News-Record.

• EMPLOYMENT SERVICES

Engineers—Write today for job opportunities —Mid West. Baker Employment, Decatur, Ill.

• POSITIONS WANTED

Heavy Construction Engineer, 45, 20 yrs. exp. from estimate, bid preparation, plant construction to project completion, field engr. office engr., costing, estimation, supervision and assistance to crafts superintendents during project. Served as Ch. Engr. on hydrodams & powerhouses, highways, bridges, etc. PW-2894, Engineering News-Record.

Supt. or Proj. Engr.—Married—Age 31—Experienced in all phases of highway const. estimating & supervision. I.C.S. Educ. presently located in metropolitan area. PW-2870, Engineering News-Record.

Graduate Civil Engineer-Registered Land Surveyor, 32, 10 yrs. experience; land surveying, subdividing including sewer, water, and road design. Location open. PW-2864, Engineering News-Record.

General construction superintendent, over 30 years experience, all types and sizes of bridges, Marine and industrial foundations, one or large groups of structures, Caissons and cofferdams, fully qualified to supervise and train foremen and superintendents all crafts, plan and expedite job, set up cost systems, co-ordinate job with subs, etc. Available at once for interview, no degree, Mobile can relocate. PW-2961, Engineering News-Record.

Civil Engineer—5 years construction experience; desires responsible position in construction supervision near East or West Coast. PW-2998, Engineering News-Record.

(Continued on the following page)

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1. Complete charge of your own Division.
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ASSOCIATES needed in the following divisions: PETROLEUM, CHEMICAL & PETROCHEMICAL, GEOLOGIST & MINING, INDUSTRIAL ENGINEERING, MECHANICAL, ELECTRICAL, ARCHITECTURAL-ENGINEERING, CONSTRUCTION ENGINEERS (2) required. Both domestic and foreign work.

AGE: 40 to 65; President, Executive Vice-President, and Vice-President level.

MINIMUM INVESTMENT required $25,000.00 Principal enjoys TOP recognition in world affairs.

JOB HUNTERS NEED NOT APPLY.

Send complete resume to:

P-2588, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

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Must have at least 10 years responsible design experience in structural steel, pressure vessels, instrumentation, heavy machinery or piping for:

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Openings at our Cleveland offices.
Send detailed resume to:

G. VICTOR HOPKINS

ARTHUR G. McKEE & CO.
2300 Chester Ave., Cleveland 1, Ohio

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Travel to interview and select workers for offshore construction project. Must be able to judge applicants ability in their crafts.

Salary—commensurate with ability, plus vacation, sick leave, and hospitalization insurance.

Only complete resume sent to **P-2989,** Engineering News-Record, Class. Ad Div., P. O. Box 12, N. Y. 36, N. Y., will be considered.

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A major steel company has need for sales engineers to promote and sell fabricated products in Middle Atlantic States. Excellent opportunities for men 25 to 30 years old with engineering background and a desire for sales work. Attractive salary with company car, expenses and bonus plan.

SW—2763 ENGINEERING NEWS-RECORD
Class. Adv. Div., P.O. Box 12, N. Y. 36, N. Y.

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Engineering, Contracting Company, well financed, good reputation, needs general manager. Good opportunity available for a man experienced in industrial, petrochemical and refinery engineering and construction. All replies held in confidence. Submit resume to P. O. Box 2963, Houston 1, Texas.

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Multi-Purpose Dam Project in Thailand

24-Month Contract

Fully qualified engineer with five or more years of large Arch Dam construction experience. Only qualified applicants will be considered. Experience must include mass concrete pours, cooling of mass concrete, placement of reinforcing steel. Prefer mature man with Civil Engineering degree or will consider man with equivalent experience. Family status available. Must pass physical examination and security investigation.

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Write fully, include complete salary information to:

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HARBORS & DOCKS

An exceedingly challenging position is available for a Civil Structural Engineer with a minimum of 12-15 years experience, with at least the past five years in the senior responsible position on major civil engineering projects, especially harbor and marine facilities. Experience will include both design and construction, plus analysis and reports relating to sedimentation, foundation investigation, tidal silting and erosion, harbor channels, and navigation aids.

He will have overall responsibility for reconnaissance and field investigation, surveys, data procurement and analysis, preparation of engineering study reports, design, working drawings and specifications.

This engineer must be an excellent administrator with proven experience in dealing with government personnel, especially foreign government officials. Project is in a relatively primitive country with minimum comfort and sanitary facilities. Duration is estimated at 18-24 months. Salary is geared for a top man. Desire is that he will go single status, as family accommodations are minimum.

This position is with a leading planning and engineering firm of world-wide scope, with home offices located on the West Coast. Please submit complete resume to

P-2973, Engineering News-Record
1125 W. 6th St., Los Angeles 17, Calif.

• POSITIONS WANTED
(Continued from preceding page)

Wanted: Administrative Position. Experienced Government Contracts, specifications; private contracts and local codes. Responsibility administrative direction, estimating, sub-contracts, securing prices and materials, stock and material control, preparing varied schedules applicable to above of M.E. nature for General Contractor. Past two years General Manager leading manufacturer's distributor Air Conditioning and Refrigeration including Sheet Metal Department. Varied field experience—Mechanical Engineering. Member SAME & RSES. Available 60 days. PW-2967, Engineering News-Record.

Graduate B.S.C.E. with 10 years experience in most phases of reinforced and structural steel erection including all types of municipal bldgs, flood control work and towers. Past 3 years as sub-contractor on same. Desire position in Calif. area near Los Angeles or San Francisco. Age 35, PW-2992, Engineering News-Record.

Master Mechanic, Capable, Sober. PW-2957, Engineering News-Record.

General Superintendent, 25 years experience, Industrial, Public, and Commercial buildings. Includes all phases of construction. Estimating, organizing, completions, negotiations for extras etc. Minimum salary $15,000.00. PW-2925, Engineering News-Record.

Field Man—Personnel, Purchasing, Timekeeping, Cost, Payroll, Paymaster. A 1 references—willing to travel. PW-2916, Engineering News-Record.

Superintendent in steel const. bridges—tunnel and tank fabrication experience. Availabel anytime—present job stalemated. PW-3003, Engineering News-Record.

Project. Engr.—Supt.—Hvy. Const., C. E. linguist, 47, married, 25 yrs. exp field & office, est. to proj. compl., plants, hwys., R.R., bridges, etc. on 4 continents seeks resp. pos. o'seas; pref. S. Am.; S or W US. PW-3004, Engineering News-Record.

Superintendent: 38—married—15 yrs. wide experience as General, Job and Project Supt.; office and field; commercial and industrial building; exp. multi-story and govt. bldg. Desire permanent position. PW-3011, Engineering News-Record.

Prestress Plant Manager. Age 40. Broad knowledge of plant construction and concrete mix design; estimating, promotion, procurement, production, quality control, material handling, delivery and erection. Has set up and developed large temporary and permanent prestressing plants. Interested in permanent connection. Prefer Northeast—Mid-Atlantic area. PW-3017, Engineering News-Record.

Civil Engineer, M.S.C.E. Structures. P.E. Conn., age 31, married. 7 years progressive experience in consulting field as design and assistant project engineer—primarily structures, sanitary and water supply. Desire Connecticut location. Resume on request. PW-3016, Engineering News-Record.

Sales Engineer 29 yrs. old married six years experience major steel company selling building products. Interested in steel or aluminum sales Maryland Delaware or Washington D.C. area. PW-3020, Engineering News-Record.

Wanted: A sales job contacting architects, builders, owners. Qualifications: fifteen years selling, planning library, school, hospital equipment. Contacts: Practically every institutional architect from Maine to Miami—and the west coast too. Personal: Age 39, married, avaliable 12/1/59. PW-2986, Engineering News-Record.

District Manager. 37. CE degree top University, 12 years construction products sales, dealers and direct, desires challenging Regional or National assignment. Outstanding military, college and business records. PW-2985, Engineering News-Record.

Civil Engineer. Construction executive. Canadian, 41, thirteen years Latin American experience, available on short notice for local or foreign assignment. Resume on request. PW-3013, Engineering News-Record.

Civil Engineer—Danish—Age 30—married, with 8 years of experience in U.S.A. and North Africa as a Highway Engineer and Designer, with leading companies. Languages: English, French, Danish, some German and Arabic. Resume on request. PW-2978, Engineering News-Record.

Sanitary Engineer with excellent health and 37 years broad experience in all phases of sanitary engineering will be available after Feb. 1, 1960. Can train personnel and handle projects from inception to finish. PW-2980, Engineering News-Record.

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Low cash price for Pre-Winter Clearance. EXCEPTIONAL VALUES All offered subject to prior sale or disposition.

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All Electricweld, Mill Tested, app. 40' DRL, beveled. Priced attractively for prompt shipment, Detroit, Michigan.

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Scrapers—4 and 6 wheel Bottom Dumps—late model TC 12 Crawler Tractor

Low cash price for pre-winter clearance.

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Dixie Model CD-10B with Cutter Head, Piping and Accessories. Powered by Caterpillar engines. Output of 182 c.y. per hour over 4000 ft. Used very little. New 1959. Located Bahamas.

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1—Erie Cement Handling Plant, 450 BBl capacity w/elevator powered, w/ electric motor.

Located at East Greenwich, R. I. Price as is, where is, $5,000.00. Purchased new in May 1959, used on one job only.

1360 1. ft. 15" x 19" dual purpose airport concrete forms (10' long) with (4) double stakes pockets single wedge.

Mfg. by Chain Belt Co. Price as is, where is @ $4.75 per 1. ft. Located at Hyannis, Massachusetts. Purchased new in 1958, used on one job only.

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CAMP EQUIPMENT FOR SALE

Will Accommodate 200 People

Cots (with blankets, pillows and sheets), oil heaters, walk-in refrigerator and other kitchen appliances and utensils, etc.

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2 machines in excellent condition, ready to work.
2 spare tires, engines recently reconditioned.

Subject to prior sale or disposition.

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Complete used Cedarapids Commander Portable Crushing Plant S/n 15189. D337F Cat. eng. mounted. Sand ejector.

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3 Northwest Cranes—Model 25—Diesel Engine

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Note: All cranes have been only used for lifting

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Diesel Engine Compressors—105, 125 cfm, 365 cfm, and 600 cfm, available. 3", 4" and 6" gas and electric pumps. 25,000 ft. Waco Forms.

Accessories for above and miscellaneous as welders, transits and levels, mixers, finishing machines, saws, etc.

Equipment in first-class condition.

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1—Used Lima Model 1201, New Cummins Engine and Undercarriage Rebuilt in 1958

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1—Used Manitowoc 3500

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All in good working condition

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Euclid "6-wheel" Scrapers

15½ yd. Euc. Scrapers—three 8TDT, four 14TDT—powered by 275 h.p. Cummins Diesel, 10 speed transmissions. Year 1952 & 1953.

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48B Bucyrus Erie Shovel, diesel 2½ c.y.
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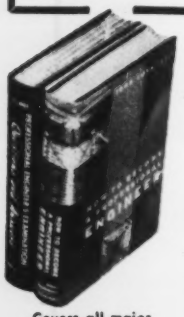

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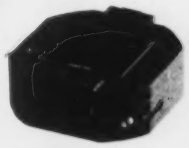

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Editorials

Consulting by Professors

ALL'S WELL in South Dakota. The Board of Regents there is to be commended for prompt and proper action on a protest against the practice of engineering by the state's engineering teachers.

In three short whereases and a couple of be-it-resolveds, the board approved consulting work or other private practice by professors, and also set forth the provisions under which such work should be done. By its action the Board of Regents rebuffed the state's association of consulting engineers, which had lodged the protest—unless, that is, the consultants really wanted nothing more than the provisions, which now will guide the educators' spare-time activities. At any rate, the South Dakota resolution (see p. 25) resolves the problem in a sensible way.

Choose Right Man for IJC

UNITED STATES REPRESENTATION on the International Joint Commission has been without a permanent head since the death of Douglas McKay, former Interior Secretary, last July. The vacancy is unfortunate, for several boundary water problems between Canada and the U.S. are at a high point of urgency now, and IJC is the treaty organization set up in 1909 to solve them.

To decry the lack of a permanent chairman is in no way to disparage the able performance of Eugene Webber, the acting U.S. chairman, or Francis Adams, the other American on the commission. But Mr. Webber's responsibilities must be to a great extent custodial, pending appointment of a permanent chairman.

In picking a successor for Douglas McKay, the State Department—responsible for recommending IJC appointments to the President—should take serious cognizance of the great immediacy and importance of matters being handled today by the commission. These problems—revolving around the Great Lakes, the St. Lawrence and Niagara rivers, the Columbia River Basin and Passamaquoddy Bay—may have great diplomatic and legal significance, but above all they are engineering problems.

It is appropriate to note here that Canada's three-man half of IJC is headed by an engineer and administrator of great prestige, vigor and ability—A. G. L. McNaughton. General McNaughton represents Canada's interests in the IJC with unquestionable competence.

Fortunately, U.S. and Canadian interests are seldom in very serious conflict. That fact, plus the traditionally cordial relations we enjoy with our northern neighbors, accounts for our having been able to coast along for months without a permanent head for our half of IJC.

However, there are certain problems before IJC that can't possibly be settled except through negotiation. And in negotiating these matters, we need a champion like Canada's in our corner.

In the best interests of our nation, President Eisenhower should name a worthy counterpart for General McNaughton—and fairly soon. And it is to be hoped that a man of proven technical competence in the water resources field will be chosen—ideally, one who knows the Columbia Basin water situation, as this is a question of prime importance before IJC. The worst thing that could happen would be to make this very vital post a political sinecure.

Dam Experts Needed

THERE APPEARS TO BE a conflict between recent reports of power development in the U.S.S.R.

Item: Three U.S. Senators and a staff of advisers returned from the Soviet Union recently with the "regrettable" conclusion that the Russians are assuming world leadership in hydroelectric power.

Item: Two groups of electric utility leaders have come back to the U.S. with word that Russian production of power will lag behind ours for the foreseeable future.

Obviously, the Senators (three Democratic members of the Senate's Internal and Insular Affairs Committee) concerned themselves particularly with water power in the Soviet Union, while the utility men had total power production in mind. So the apparent conflict in viewpoints is not a real conflict at all.

The fact is that in total power production the Soviets are not likely to challenge the U.S. for years to come, if ever. It is also a fact that the U.S.S.R. is doing some remarkable things in hydroelectric power development. But whether world leadership in this field is passing to that country remains to be seen.

Rate of growth is not the only measure. Nor is size of individual projects. What is important is the quality of design and construction, and none of the groups that have so far visited Russia have had the personnel or the interest to examine this question thoroughly.

If a true comparison of hydroelectric projects—their design and construction—is to be made between the U.S. and the U.S.S.R., it must be made by a relatively large group of U.S. experts in dam engineering. It is time such a group was organized to return the visit Russian engineers paid to U.S. projects following the Congress on Large Dams in New York City last fall.

Maybe such a visit would dispel the conflict—real or otherwise—over whether the Soviets lead the world in hydro or total power development. More important, however, and quite aside from comparisons, an inspection tour of Soviet dams by U.S. experts would contribute new knowledge to all the world's dam builders. The next group that goes to Russia should be made up wholly of engineers and construction men.

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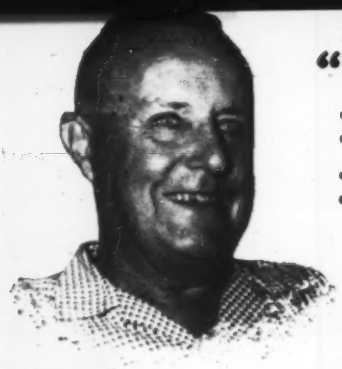

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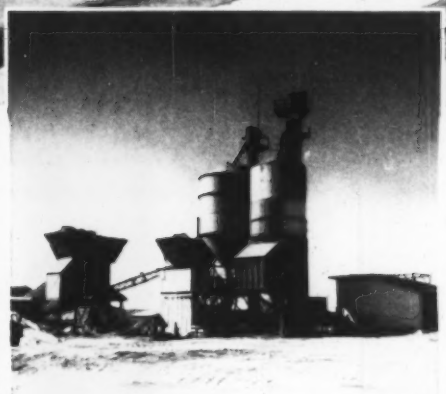

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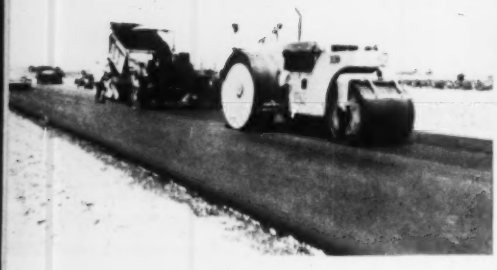

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